HOSPITAL Topics

GRAPHIC REPORTING ON TODAY'S HOSPITAL PRACTICES

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Airline Food Service Offers Mobility, Efficiency, Economy

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MAY 1958

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About the Author: Alice L. Price, R.N., M.A., B.S. degree from Purdue, Master's degree from Wisconsin. Four years resident Nurse Women's Residence Halls, Purdue; Three years Counselor, School of Nursing, Presbyterian Hospital, Chicago; Nursing Arts Instructor and Director of Nursing, several leading Midwest hospitals; Author of "The Art, Science and Spirit of Nursing," recognized as the leading textbook on Nursing Arts in U. S. and Canada, also other text books. Three years Nurse Consultant for Hill-Rom Co.

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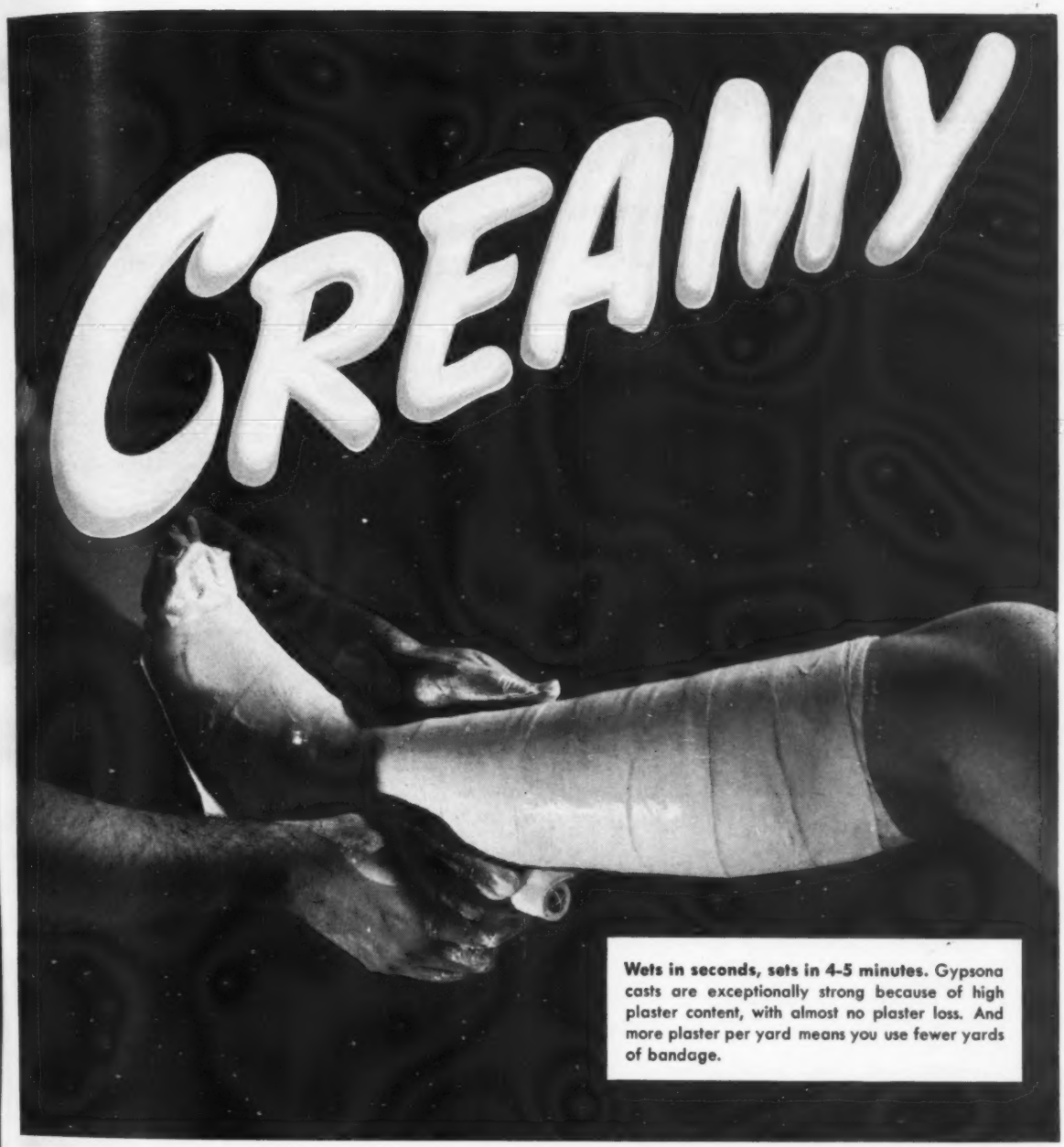

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GRAPHIC REPORTING ON TODAY'S HOSPITAL PRACTICES
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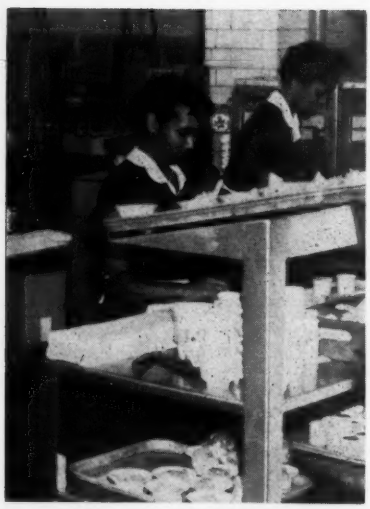

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1. Alexander, Erlythe L., Mod. Hosp., May, 1957
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PERSONALITY OF THE MONTH

THE day the 1958 Tri-State Hospital Assembly convened in Chicago—April 28—one of its directors celebrated his 45th birthday.

Fifteen of those years have been spent in administrative positions in Michigan hospitals, and Ralph C. Hutchins now heads the Michigan Hospital Association.

He is also a member of the American College of Hospital Administrators and a personal member of the American Hospital Association.

Mr. Hutchins studied at Detroit City College and received training as a medical technician at Mercy Hospital, Bay City.

His first administrative assignment was that of assistant director at Mercy in 1943. He became superintendent of Central Michigan Community Hospital at Mount Pleasant in 1946, was named director of Hurley Hospital at Flint in 1952, and in 1956 assumed his present post as director of Gratiot Community Hospital in Alma.

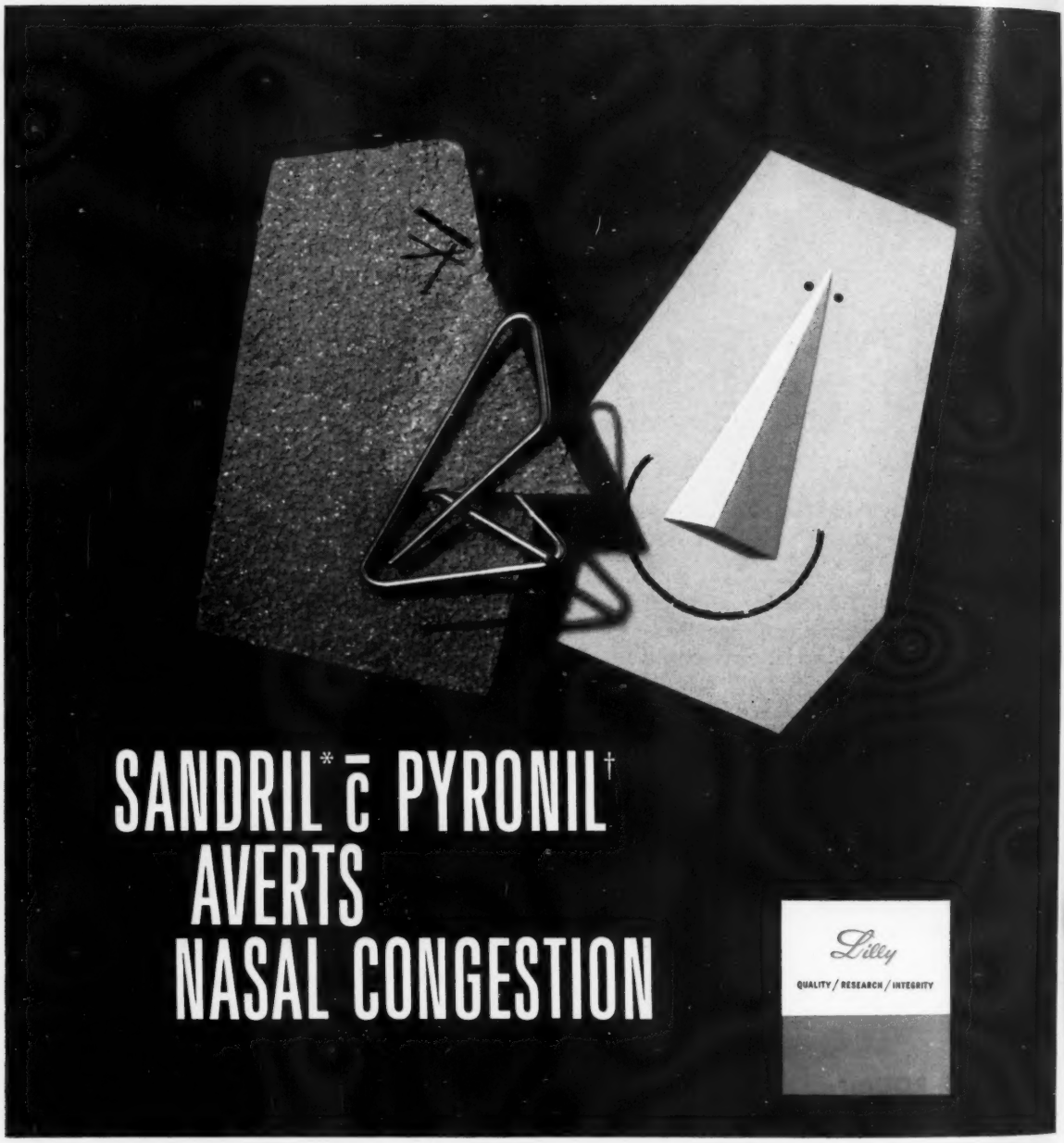
Mr. Hutchins' other hospital activities include acting as a director of the Michigan Hospital Service. He has also served in this capacity in local chapters of the American Cancer Society and American Red Cross. He has been a Rotarian for several years.

In his leisure time he enjoys gardening and working with jade.

The rest of the family consists of Mr. Hutchins' busy wife, Evelyn, and their teen-age son and daughter, John and Carol Ann. Mrs. Hutchins shares her husband's devotion to hospital work and is a member of the women's auxiliary at Gratiot hospital. Carol Ann is a member of the Future Nurses' Club at Alma high school, and some day may help to make patient care a Hutchins family project.

COMING NEXT MONTH

Tri-State Hospital Assembly
Association of Western Hospitals



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HOSPITAL Topics
The News Magazine for the Hospital Staff

MAY, 1958
VOL. 36, NO.5

Scanning the News

Radioisotopes Show Site Of Insulin Action

A new radioisotope test, devised by two doctors at the VA hospital, Washington, D. C., has demonstrated the exact site at which insulin acts in the human body.

Edward D. Freis, M.D., chief, and Harold W. Schnaper, M.D., assistant chief of medical service at the hospital, said that past investigations in animals had shown that insulin acts locally on muscle cells to increase their uptake of glucose.

Utilizing glucose tagged with the radioisotope of carbon, a radioactive dye, and radioisotope-tagged thiocyanate, the researchers showed that insulin acts locally on human tissue cells as well.

The research is aimed at helping devise therapy for insulin-resistant diabetic patients, they explained. The next step will be an attempt to discover whether insulin is broken down in the blood or liver of such patients before it can reach the tissue cells, or whether it reaches the cells but does not penetrate them in a normal way.

New Device Speeds Cooling of Blood for Surgery

A new device to reduce blood temperature in preparation for open heart surgery was described recently by Wirt W. Smith, M.D., surgical staff, Duke University, School of Medicine, Durham, N.C. At a recent conference on methodology and problems in artificial internal organs at the Rockerfeller Institute for Medical Research, New York City, Dr. Smith said that the device is in use now at Duke University Medical Center.

The device is patterned on the heat exchanger used to cool automobile transmission oil. It cools the blood directly and can lower the temperature 10 degrees in five minutes, more rapidly than current hypothermia techniques. It can also raise the blood temperature with similar rapidity.

In the device, the blood moves through a group of steel tubes cooled by circulating water in a steel jacket. The temperature of the circulating water is controlled automatically.

The device, described as about the size of a rolling pin, was developed in cooperation with the Harrison Radiator Division, General Motors Corp., Lockport, N. Y.

Sample Drugs Stored Five Years as Test

Chemists at Arner Co. are studying five-year-old drugs, laboratory samples from every drug lot manufactured by the company.

The drugs are analyzed after storage at room temperature for the five-year period to obtain data for improving production methods and stability factors.

Included in the stored drugs are almost every type of pharmaceutical from antibiotics to vitamins, according to the company.

X-Rays in Pregnancy Linked to Leukemia

X-rays of the pelvic area of women in late pregnancy apparently are playing a part in the rise of leukemia among children, according to findings in a recent study at Tulane University, New Orleans.

About one in every five expectant mothers received radiation during late pregnancy as a part of routine examination. More than 25 percent of the leukemia uncovered during the survey was found in children of these irradiated mothers.

Nearly one-third of the other kinds of malignancy occurred in children of mothers subjected to diagnostic radiation.

The findings were reported by Dorothy Ford, senior medical student, who examined records of 300 children of unradiated mothers, 80 leukemic children, and 70 others with other kinds of malignancy.

New Ointment Effective in Healing Infected Wounds

A new ointment containing a derivative of the tropical fruit, papaya, produces a high rate of healing in infected surface wounds, according to surgeons at the VA Hospital, Fort Howard, Md.

Joseph M. Miller, M.D., of the hospital staff, reported that the ointment, a combination of the papaya derivative, papain, and urea and the water-soluble derivatives of chlorophyll, produced excellent results in 100 of 106 infected wounds treated.

In five patients with wounds which failed to heal, gangrene was present and the blood supply to the infected areas was extremely poor, Dr. Miller said.

Dr. Miller and his associates, George C. Godfrey, M.D., Milton Ginsberg, M.D., and Constantine J. Papastrat, M.D., have found that the ointment works equally well regardless of the type of bacteria present. It produced no toxic reactions.

However, they pointed out, the ointment is designed for treatment of surface wounds, and should not be used on lesions of body cavities unless they communicate with the body surface.

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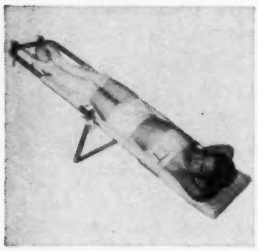

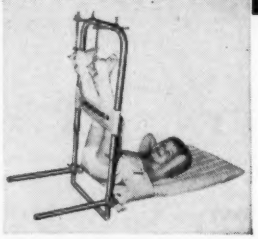

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News Briefs at Press Time

PASSAGE OF LEGISLATION FOR LOW-INTEREST RATE LOANS SEEMS LIKELY

Legislation to provide low-interest-rate loans to states and municipalities seems assured of passage by Congress. Senate has already passed it.

Bill would provide for loans for construction of any kind of municipal facility—including hospitals and health centers.

MEDICARE PROGRAM EXPENSE CRITICIZED: FREE CHOICE OF CARE CHALLENGED

Investigation of Medicare program by House Appropriations Committee was scheduled to begin April 24. Outcome will influence amount of appropriations for next fiscal year, as well as administrative policies and procedures.

Congressional criticism of rising costs of hospital and medical services being charged to government has caused speculation that attempt may be made to withdraw privilege dependents now have of choosing between private and federal medical care.

Each dependent in a civilian hospital is costing government an average of $50.25 a day, according to Rear Adm. F. P. Gilmore. This includes the doctor bills but not the patient's share of expenses.

In 1957 (first full year in which Medicare was in effect), admissions to naval hospitals declined 21 percent over the previous year.

Elimination of "free choice" would probably have far less effect on civilian hospitals' operations than Congress or military officers might imagine. Actually, even in areas which have large military installations, Medicare-sponsored patients represent less than three percent of the patients in hospitals, according to our Washington correspondents.

RADIOLOGISTS ADOPT RESOLUTION CONDEMNING UNETHICAL RELATIONSHIPS

The American College of Radiology's Board of Chancellors has approved unanimously a resolution calling it unethical for any radiologist to enter into a relationship with any hospital, corporation, or lay body which enables the organization to offer his services for a fee. The resolution will be added to the Principles of Ethical Radiological Practice.

The resolution further stated that in insurance or other prepayment programs, hospital service contracts shall provide for hospital services only, and that hospital services shall not include the practice of radiology.

It went on to say that the ACR did not wish to condemn radiologists who are now employees of a corporation or other lay agency which does not sell the professional services of the radiologist—including the radiologist who wholly or in part devotes himself to teaching, administration, research, charity, government service, or the like, and is remunerated for these services only.

"No stigma shall be attached to any radiologist because of his financial arrangements existing at the time of the adoption of this policy," the resolution continued, "provided a sincere effort is being made by the radiologist to comply with this statement of policy."

An accompanying resolution, referred to the Commission on Constitution and By-Laws, asked that the executive committee of the ACR prepare an amendment to demand that on an "appropriate date" membership or fellowship in the organization shall require that the radiologist's name appear on statements for radiological services.

NEWS BRIEFS

Atomic Energy Commission is reducing its prices 90 percent and more on five of the longer-lived radioisotopes—Cesium 137, Promethium 147, Cerium 144, Strontium 90, and Technetium 99—"to give medical and research institutions and industry opportunity to prepare for large-scale use of the radioisotopes" . . . Fifteen grants totaling $297,510 have been approved by the Office of Vocational Rehabilitation. Four are optical-aid clinics for the near-blind; three are for occupational appraisal and training of cerebral palsied and mentally retarded. Others will benefit epileptics, home-bound chronically ill, and the physically handicapped with emotional problems.

Gordon M. Marshall

Calender of Meetings

MAY

2- 3 American Osteopathic Hospital Association, Mid-America Institute, Hotel President, Kansas City, Mo.

5- 8 Texas Hospital Association, Statler Hilton Hotel, Dallas

6- 8 American Hospital Association Institute, Hospital Auxiliary Leadership, Edgewater Beach Hotel, Chicago

12-14 Arkansas Hospital Association, Arlington Hotel, Hot Springs

12-15 American Hospital Association Institute, Central Service Administration, Roosevelt Hotel, Pittsburgh

12-16 American Psychiatric Association, Civic Auditorium, San Francisco

14-16 Southeastern Hospital Conference, Hotel Fontainebleau, Miami Beach, Fla.

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14-16 Upper Midwest Hospital Conference, Minneapolis

15 Massachusetts Hospital Association, Hotel Statler, Boston

19-23 American Osteopathic Hospital Association, Medical Record Librarians Training School, Kellogg Center, Michigan State University, East Lansing

21-23 Middle Atlantic Hospital Assembly, Convention Hall, Atlantic City, N. J.

21-23 Hospital Association of New York State, Hotel Claridge, Atlantic City, N. J.

21-23 Hospital Association of Pennsylvania, Convention Hall, Atlantic City, N. J.

21-23 New Jersey Hospital Association, Convention Hall, Atlantic City, N. J.

22-23 Association of Western Hospitals Institute, Business Office Management and Supervisory Training, Riverside Hotel, Reno, Nev.

25-31 World Congress of Gastroenterologic Societies, Sheraton-Park Hotel, Washington, D. C.

26-29 American Hospital Association Institute, Nursing Inservice Program, Antlers Hotel, Colorado Springs, Colo.

JUNE

2- 5 American Hospital Association Institute, Hospital Dental Service, Edgewater Beach Hotel, Chicago

2- 6 American Hospital Association Institute, Dietary Department Administration, Sheraton-McAlpin Hotel, New York City

4- 6 American Hospital Association, Hospital Organization Planning Workshop, Hotel Roanoke, Roanoke, Va.

9-11 American Hospital Association Institute, Administrators' Secretaries, Villa Hotel, San Mateo, Calif.

9-13 American Nurses Association, Convention Hall, Atlantic City, N. J.

10-11 Maine Hospital Association, Samoset Hotel, Rockland

11 Connecticut Hospital Association, Berlin Light and Power Co., Berlin

15-20 American Physical Therapy Association, Olympic Hotel, Seattle

(Continued on page 12)

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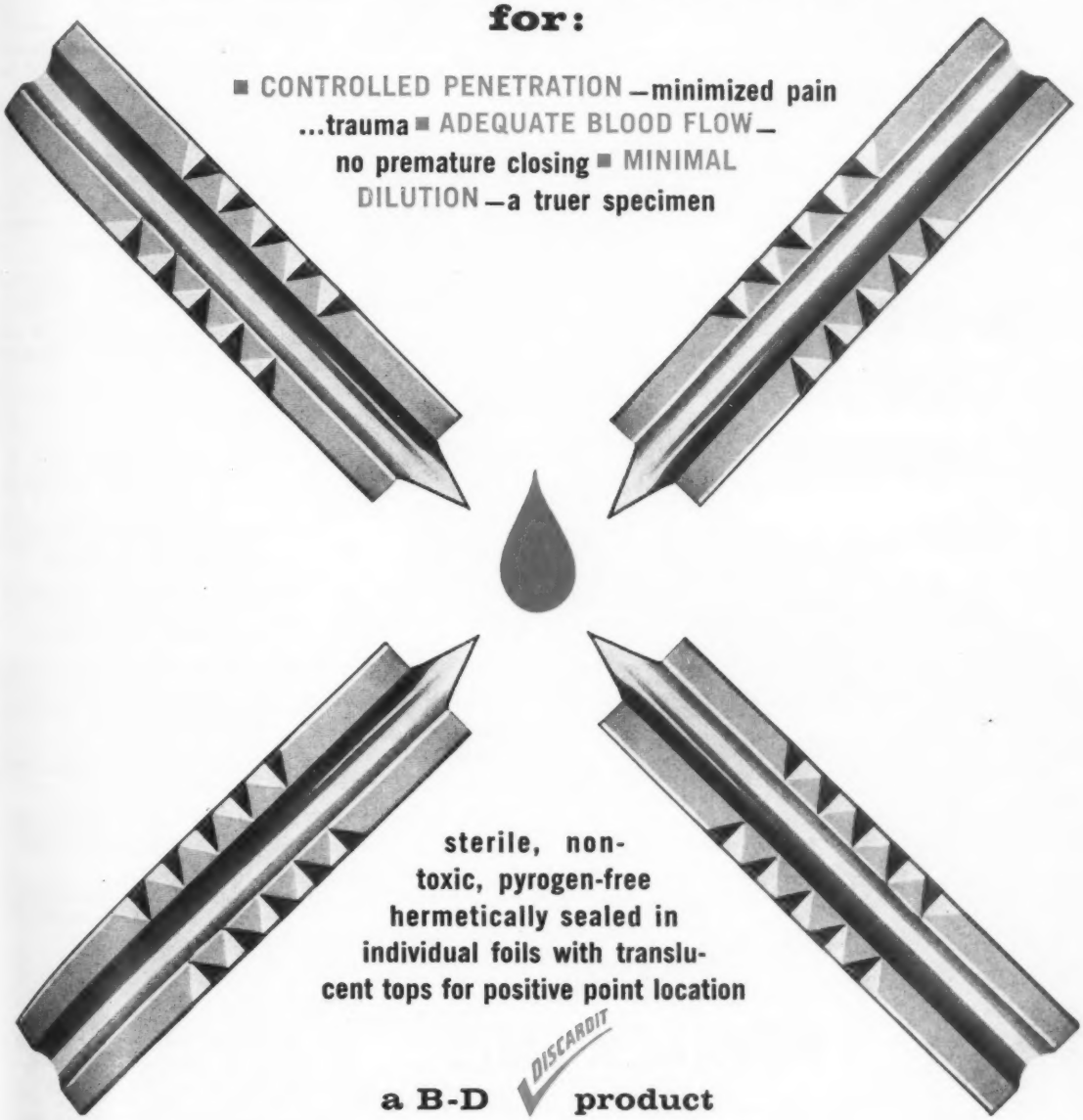

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CALENDAR

(Continued from page 10)

16-18 Michigan Hospital Association, Grand Hotel, Mackinac Island

16-19 American Hospital Association Institute, Hospital Public Relations, Claremont Hotel, Berkeley, Calif.

16-19 American Society of Medical Technologists, Municipal Auditorium, Milwaukee

16-20 American Hospital Association Institute, Hospital Pharmacy, Temple University, Philadelphia

18-22 American College of Chest Physicians, Fairmont Hotel, San Francisco

23-27 American Medical Association, Plaza Exhibit Hall, San Francisco

23-26 Catholic Hospital Association, Atlantic City, N. J.

25-27 American Hospital Association Institute, Directors of Hospital Volunteers, Bellerive Hotel, Kansas City, Mo.

25-27 Comite des Hopitaux du Quebec, Montreal Show Mart, Montreal

JULY

1- 3 American Hospital Association Institute, Hospital Law, Cosmopolitan Hotel, Denver

13-18 American Association of Hospital Accountants, Annual Institute on Hospital Accounting and Finance, Indiana University School of Business, Bloomington

14-18 American Hospital Association Institute, Hospital Purchasing, Michigan State University, East Lansing

28-August 1 American Hospital Association Institute, Hospital Pharmacy, University of Chicago, Chicago

AUGUST

4- 8 American Osteopathic Hospital Association, Medical Record Librarians Training School, University of Colorado, Boulder

15-20 World Medical Association, Copenhagen, Denmark

16-18 American College of Hospital Administrators, Annual Meeting, International Amphitheatre, Convocation, Orchestra Hall, Chicago

18-21 American Hospital Association, International Amphitheatre, Chicago

24-29 American Congress of Physical Medicine and Rehabilitation, Philadelphia

SEPTEMBER

8-12 AHA Institute, Dietary Department Administration, Bellerive Hotel, Kansas City, Mo.

15-17 AHA Institute, Disaster Planning, Adolphus Hotel, Dallas, Texas

18-19 American Osteopathic Hospital Association, Northwest Institute, Multnomah Hotel, Portland, Oregon

22-25 AHA Institute, Evening and Night Nursing Service Administration, Sheraton-Lincoln Hotel, Indianapolis, Indiana

28-Oct. 1 American Fracture Association, Oklahoma City, Okla.

29-Oct. 2 AHA Institute, Operating Room Administration, Sheraton-McAlpin Hotel, N. Y.

29-Oct. 2 AHA Institute, Medical-Social Workers, Hotel Radisoon, Minneapolis, Minnesota

OCTOBER

13-16 American Association of Medical Record Librarians, Statler Hotel, Boston

15-16 Washington State Hospital Association, Winthrop Hotel, Tacoma

15-18 West Virginia Hospital Association, Boone Hotel, Charleston

20-21 Idaho Hospital Association, Elks Temple, Boise

24-25 Mississippi Hospital Association, Hotel Heidelberg, Jackson

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***Cates & Basmajian:* PRIMARY ANATOMY.** For students of physiotherapy, nursing, physical and health education, etc. Informative and interesting. 347 pp., 441 figs. (1955), 3rd ed., $5.75.

***Collis & Mabbit:* HANDBOOK OF CHEST SURGERY FOR NURSES.** Concise presentation of the more common points of chest surgery. Anatomy, physiology, and pathologic conditions and their treatment. 204 pp., 120 figs., 16 pls. (1956), 4th ed., $3.75.

***Craig:* NURSING CARE OF THE NEWLY BORN INFANT.** Stresses the fundamental importance of clinical observation. 480 pp., 282 figs. (1956), $7.00.

***Farfor & Palin:* OPHTHALMIC NURSING.** One of the popular, concise *Nurses' Aid Series*. 240 pp., 79 figs. (1957), $2.50.

***Farrow:* SURGERY OF CHILDHOOD FOR NURSES.** The basic features of the most common conditions. 321 pp., 142 figs. (1956), $6.00.

***Fream:* ARITHMETIC IN NURSING.** Another popular title in the *Nurses' Aid Series*. 169 pp., 9 figs. (1956), $1.75.

***Houghton & Sellors:* TUBERCULOSIS NURSING.** *Nurses' Aid Series*. 316 pp., 61 figs., 18 pls. (1957), $3.00.

***Jamieson:* ILLUSTRATIONS OF ANATOMY FOR NURSES.** Paper, spiral bound, selection of plates from the author's larger works. 92 pp., 80 col. pls. (1950), 3rd ed., $3.00.

***Moroney:* SURGERY FOR NURSES.** Written for nurses by physicians and surgeons. 724 pp., 661 figs. (1958), 5th ed., $7.00.

***Powell:* ORTHOPEDIC NURSING.** Teaches all the tricks of the specialty. 452 pp., 300 figs. (1957), 2nd ed., $6.00.

***Ross & Wilson:* FOUNDATIONS OF NURSING.** A textbook for all student nurses. 300 pp., 108 figs. (1957), 2nd ed., $4.00.

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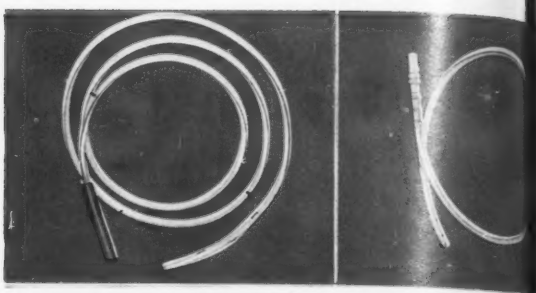

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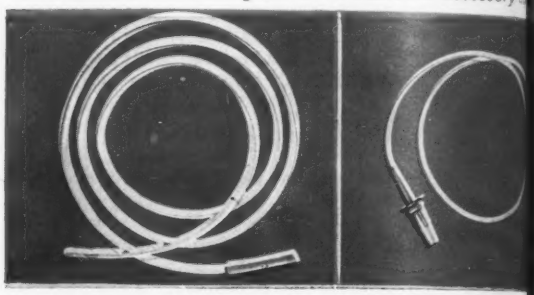

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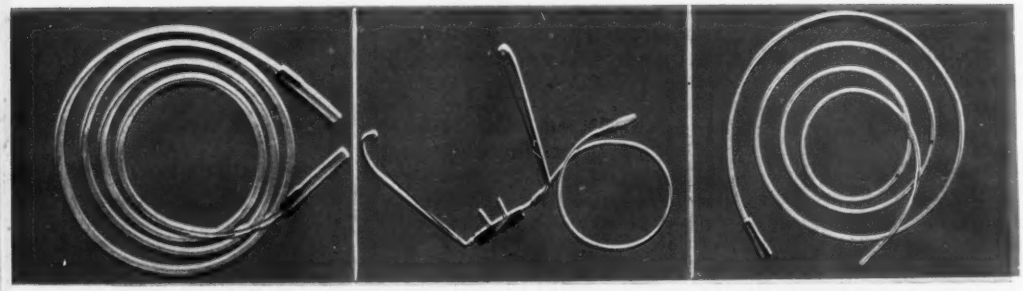

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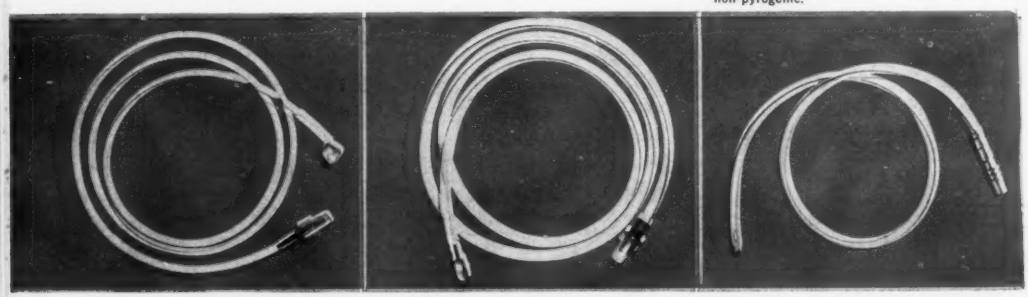

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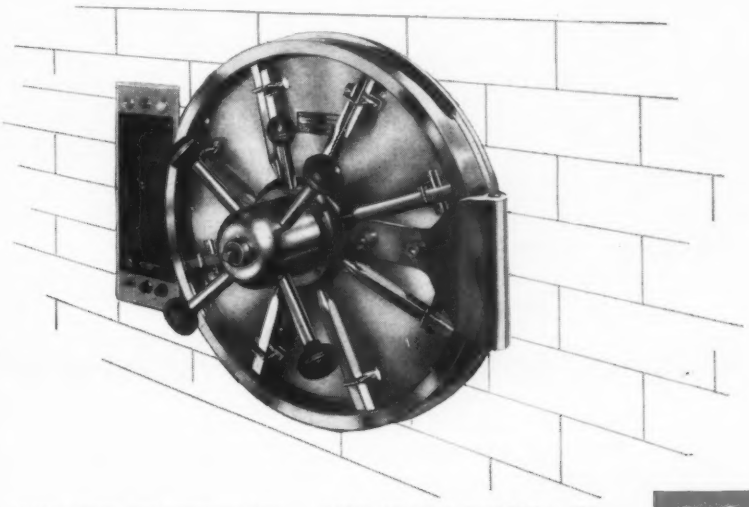

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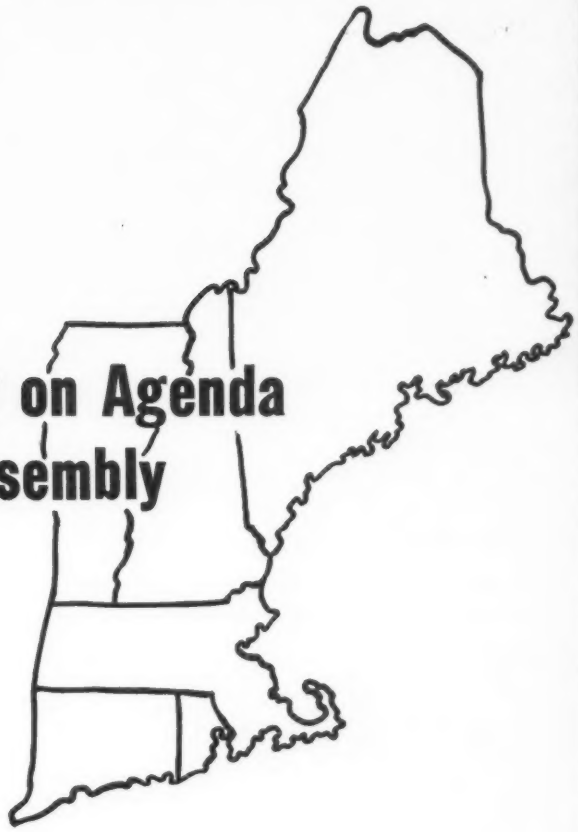


Rehabilitation, Pharmacy on Agenda At 35th New England Assembly

TOPICS reports on Boston meeting March 24-26, attended by 5,700.

Trained, Dedicated Personnel Greatest Lack in Federal Rehabilitation Program

Psychological Impact of Disability Is Biggest Patient Problem

The federal government has recognized the importance of its vocational rehabilitation program, and since 1954 has increased its investment from $23 million to $50 million. In 1957 the number of patients treated through the federal program reached 72,000.

Although these people were given medical treatment and eventually were placed on jobs, many of them had been out of a hospital for years and had lost valuable time. This factor made their rehabilitation more difficult and more costly.

Roadblocks to an effective rehabilitation program include lack of money, of knowledge, of facilities, and the greatest lack of all—trained, dedicated personnel.

In carrying out a rehabilitation program, perhaps the greatest problem is the psychological impact of disability on the patient. A person threatened with permanent loss of his social position, limitation of his intellectual and physical activity, his very livelihood, needs help to effect a realistic adjustment to the new way of life that he is compelled to embrace.

(Continued on next page)

New England Hospital Assembly officers named at the 35th annual meeting are (l. to r.): exhibit manager, Reo J. Marcotte, M.D., administrator, Mount Auburn Hospital, Cambridge, Mass.; treasurer, Lois A. Bliss, R.N., administrator, Franklin (N.H.) Hospital; president, Francis C. Houghton, administrator, Rutland (Vt.) Hospital; president-elect, Philip D. Bonnet, M.D., administrator, Massachusetts Memorial Hospitals, Boston; and secretary, Wesley D. Sprague, administrator, New England Deaconess, Boston.

Above, left: Opening the meeting were (l. to r.) Frank E. Wing, former director, Boston Dispensary; William E. Smith, executive director, Hospital Industries Association; Maj. Maud A. McGowan, Booth Memorial Hospital, Boston; and William S. Brines, director, Newton-Wellesley Hospital, Newton Lower Falls, Mass., who presided.

Above, right; NEHA past president William E. Sleight (l.), director, Roger Williams Hospital, Providence, R. I., and William K. Turner, (r.) director, Newport (R. I.) Hospital, chat at a hospital auxiliary luncheon with the Hon. John E. Fogarty, Rhode Island congressman, who was guest speaker. Several sessions on auxiliary problems and projects were included in the convention program.

It is in this area that the hospital staff—from the people at the admission desk to the doctors and nurses—have an opportunity to be helpful or harmful. Informed realism is essential and is the core of the rehabilitation philosophy.

Not every hospital can set up a rehabilitation department, but the staff of each can familiarize itself with the resources of the community which can provide a bridge to effect maximum restoration of the patient's powers.—*Mary E. Switzer*, director, Federal Office of Vocational Rehabil tation, Washington, D.C.

New Graduate Nurse Requires Period of Adjustment to Job

Program Planned to Orient Her, Guide Growth and Development

When a student nurse graduates, acquisition of the white uniform and the letters, R.N., does not automatically bestow maturity or lessen the strains of the job. Rather, graduation creates new difficulties in adjustment to a constantly changing and expanding profession.

Three programs have been developed in our hospital to aid in guidance of the new graduate. First, an orientation program lessens the initial stress of the young nurse in her job; second, head nurses and supervisors are given an opportunity to improve their knowledge and skill in guidance; and third, single or multiple conferences are planned in response to a ward situation which involves the young nurse and her emotional adjustment.

Almost all of the hospital departments contribute to these programs. In particular the resources of the psychiatric service are used.

Orientation begins with a required two-week period during which the new nurse attends meetings designed to introduce her to the job and the hospital. Coincidentally, on the ward, the head nurse orients her to patients, personnel, and routines. However, ward assignment is minimal.

Below, left; Participating in a panel on methods of food service which might be adapted by the hospital dietary department were: (standing, l. to r.) Richard F. Treadway, president, Treadway Inns Corp., Framingham, Mass.; Ralph C. Stevens, director, Johnson & Johnson cafeterias, New Brunswick, N. J.; and E. Hampton Decker, administrator, Springfield (Mass.) Hospital, and William K. Turner, director, Newport (R. I.) Hospital, meeting co-chairmen; (seated, l. to r.) Dorothea Barllett, chief dietitian, Mary Hitchcock Memorial Hospital, Hanover, N. H.; Anthony Athanas, owner and operator, Hawthorne Restaurants, Lynn and Swampscott, Mass.; and Frances L. Ware, chief dietitian, Rhode Island Hospital, Providence.

Below, right: Speaking on new hospital services were: (standing, l. to r.) Russell F. Cowing, radiological physicist, Cancer Research Institute, New England Deaconess Hospital, Boston; Herluf V. Olsen, Jr., assistant to director, Rhode Island Hospital, Providence; I. Herbert Scheffer, M.D., executive director, Miriam Hospital, Providence; and James A. Bougas, M.D., clinical associate, Overholt Clinic, Boston; (seated, l. to r.) Ernest C. Shortliffe, M.D., associate executive director, Hartford (Conn.) Hospital; Harvey P. Lesselbaum, M.D., director of radiology, and Nathan J. Kiven, M.D., chief, cardio-pulmonary labo-atory service, both of Miriam Hospital; and Edward J. Thomas, administrator, Manchester (Conn.) Memorial Hospital.

Above, left: Grace-New Haven Community Hospital, New Haven, Conn., was represented at the meeting by Dr. and Mrs. Albert W. Snoke and Virgo F. Caruso (center), chief pharmacist. Dr. Snoke, director of the hospital, participated in the Trustee Institute. Above, right: Case histories of coordinated rehabilitation of patients were related by members of the Rehabilitation Institute staff, Boston Dispensary. Standing (l. to r.) are Louis Tracy, assistant director, Massachusetts Rehabilitation Commission, who also took part in the program; J. A. Southworth, M.D., staff psychiatrist; and John J. Lorentz, M.D., both of the Institute; (seated, l. to r.) Mrs. Peter Latham, occupational therapist; Barbara Lake, physical therapist; Mrs. Nell Smitheringale, medical social worker; and Lorraine Baker, R.N., rehabilitation nursing supervisor, all of the Institute.

Following these two weeks, the nurse is absorbed into the ward where the head nurse and the supervisor help in her adjustment. Staff education programs have prepared them to aid in providing guidance and evaluation.

The third program is a developmental one. Its content is partially preplanned and partially drawn from the expressed needs of the staff nurse.

At the end of three months of employment, an evaluation conference is held by the head nurse with the staff nurse, and another thereafter every 12 months. These are designed to help the nurse evaluate herself and obtain guidance in her problems.—*Marie E. Rearick, R.N.*, nursing supervisor, Massachusetts General Hospital, Boston.

Small Hospitals Attempt to Provide 24-Hour Pharmacy Service

Several Solutions Possible
Some Are Costly, Dangerous

To provide for the periods of time when the hospital pharmacy is not in operation—ranging from 98 to 128 hours, depending usually on the size of the hospital —various methods have been employed: (1) the night nursing supervisor or her duly designated alternate may be allowed to enter the pharmacy, providing coverage to the best of her ability; (2) a night cabinet may be set up containing either emergency drugs alone or a supply of every drug used in the hospital.

(Continued on next page)

Below, left: Speakers on the nursing panel, Eleanor C. Lambertsen, Ph.D. (center) assistant professor, Teachers College, Columbia University, New York City, and Ruth Sleeper, R.N., director of nursing, Massachusetts General Hospital, Boston, visit with Dean Clark, M.D., director, Massachusetts General

Below, right: Sessions on the hospital pharmacy prompted many questions from the audience. William A. Regan (r.), legal consultant, Catholic Hospital Association, answers a query on legal aspect of hospital pharmacy operation. Sessions also covered cost control, staffing in pharmacy.

Below: Members of the panel on rehabilitation included Abbie E. Dunks (l.), administrator, Boston Dispensary; Francis Harding, commissioner, Massachusetts Rehabilitation Commission, Boston; and Mary E. Switzer, director, Federal Office of Vocational Rehabilitation, Washington.

Above, left: NEHA past president William E. Sleight, administrator, and Mary C. Brennan (r.), director of nursing, both of Roger Williams Hospital, Providence, enjoy an animated conversation with Mrs. Sleight (second from right) and the Sleights' daughter, Elizabeth, at reception preceding the annual dinner meeting.

Above, right: James Brines (l.) joined his parents, Mr. and Mrs. William S. Brines, for the reception, held in the Hotel Statler's Georgian Room.

Left: Others at the reception included Kenneth Williams, M.D., (l.), Vancouver, B.C., Canada, and O. Wade Cevant, Jr., Florence, S.C., both students of hospital administration, Yale University, New Haven, Conn. Right: Francis C. Houghton, new NEHA president, and Mrs. Houghton greet guests in the receiving line.

(3) The pharmacy may be closed to all members of the nursing staff and only a physician will be allowed to dispense drugs in the event of an emergency; (4) an "on-call" program may be instituted for the hospital's staff pharmacist; (5) a program may be arranged with a retail pharmacy to obtain emergency service; (6) non-professional personnel such as students or pharmacy technicians may be utilized.

The first four methods are employed most commonly because they do not add to the hospital's operating cost. However, these practices place a strain on the existing hospital staff, and there are physical limitations to the effectivenes of emergency cabinets.

Using a local pharmacy provides the hospital with the legal coverage necessary but usually means higher drug costs to the patient. The final method, utilizing students or technicians, is least desirable. The possibility of error is markedly increased, and resulting legal entanglements may be disastrous to the institution.—*William E. Hassan, Jr., Ph.D.*, acting associate director, Peter Bent Brigham Hospital, Boston.

Trustees, Administrator, Pharmacist Share Legal Responsibility for Pharmacy

The chain of legal responsibility in the control and operation of a hospital pharmacy involves trustees, administrator, and pharmacist.

A hospital involved in litigation arising from a pharmacy accident must be prepared to show that its pharmacy department was being operated in a manner conforming to any exemplary hospital of the same general size and type in the community.

The following suggestions are based upon federal, state, and municipal laws. Recommended are:

1. Formulation of a written administrative policy for operation.

2. Establishment of central control over the total pharmacy function in the general hospital.

3. Placement of special emphasis upon adequate storage facilities, and segregation of poisonous and non-poisonous pharmaceuticals, narcotics, and medications.

4. Preparation of short, specific, written memoranda from the hospital pharmacist to the designated administrative officer regarding any inherently dangerous situation in the pharmacy which might lead to some accident or untoward happening resulting in injury to a patient.—*William A. Regan, LL.B.*, Providence, R. I., legal consultant, Catholic Hospital Association.

Control of Cost in Pharmacy Must Be Joint Enterprise

Most hospital pharmacy services are accomplishing their chief purpose—that of supplying patients in our hospitals with the drugs they need.

A secondary goal is the reduction of costs. It is important and must be a joint enterprise. The doctor, administrator, and pharmacist must cooperate to control cost.

Administrator and pharmacist should never assume the physician's professional responsibility, however,

Top: Another group of guests at reception included (l. to r.) Helen Sullivan, technician, Marion Lamy, administrator, Anna King, dietitian, and Honore E. Bouthellier, trustee, all representing Moore General Hospital, Grasmere, N.H.

Left: "Administration—Off Hours" was the subject discussed by panel members Richard T. Snowman M.D., (l.), chief of medicine, Elliot Community Hospital, Keene, N.H.; Marjory Hamblin, R.N., night supervisor, Cape Cod Hospital, Hyannis, Mass.; Arthur B. Paulson, administrator, Elliot hospital; and John E. Vander Klish, director, Malden (Mass.) Hospital.

Right: Another popular session was on "Laundry, Linen and Housekeeping," in which Walter Emery (l.), superintendent, laundry and grounds, New England Deaconess Hospital, Boston, and Godfrey Crosby, administrator, Brattleboro (Vt.) Memorial Hospital, took part.

because only the doctor is qualified to make decisions regarding medical care.

Problems facing the small hospital in supplying pharmacy service are lack of personnel and difficulties in working out a suitable program with a local pharmacist when the staff does not have its own pharmacist.

In any size hospital, a pharmacy and therapeutics committee is a must. Such a committee serves as an advisory group to the medical staff and pharmacist on matters pertaining to the choice of drugs, develops a formulary or drug list of items accepted for use in the hospital, makes recommendations concerning drugs to be stocked on the nursing unit floors and by other services, and evaluates data concerning new preparations requested for use in the hospital.

The benefits of a formulary are many. It requires the doctor to order under the generic, rather than the proprietary name of a drug. It also keeps the hospital from overstocking its inventory of drug items, since the item will not be carried in stock unless approved by the pharmacy committee. But the formulary must be kept up-to-date, especially if there is no full-time pharmacist.—*R. C. Mittica*, administrator, Rockingham Memorial Hospital, Bellows Falls, Vt.

Progressive Care Program Classifies Patients According to Medical Needs

Provides Higher Level of Care, Changes Personnel Requirements

The program of progressive patient care at Manchester Memorial Hospital represents a systematic classification of patients according to their medical needs.

These needs are primarily ones which can be handled by the physician and nurse, and they are met by zoning the care according to the pattern of illness, from critical phase to complete recovery. The patient may enter at any zone and progress in any direction through the various zones depending on his medical needs.

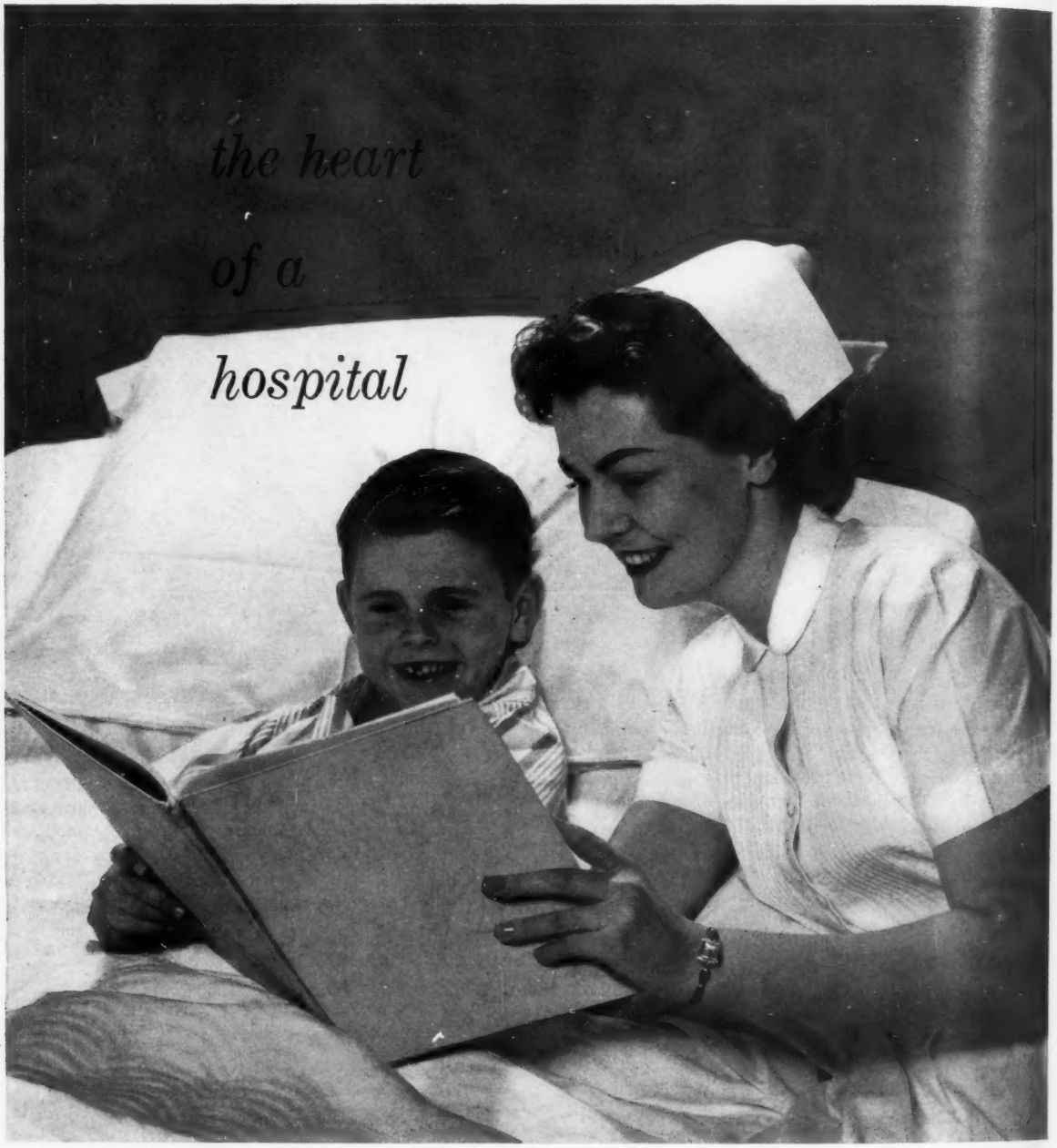
Three main divisions of progressive patient care have evolved. These include: (1) a special care unit for patients who are critically ill; (2) an intermediate care unit for patients who are sick, but not dangerously ill; (3) a self-service unit for ambulatory patients who require diagnostic studies or convalescent care.

These divisions represent broad areas of care. In practice, they shade into one another and form a continuum of care based on medical need.

Zoning care requires flexibility and good staff organization and brings staff physicians into close contact with the hospital. Doctor participation is an essential feature of the program. Good teamwork is necessary since the physician is primarily responsible for the movement of his patient through various medical units.

Systematic classification of patients, we believe, is providing a higher level of patient care as evidenced by shorter hospital stays, full utilization of medical and nursing staff, lower cost to patient and hospital, a higher level of satisfaction for patient, family, physician, and nurse, and greater hospital plant operational efficiency.

Our program is in the embryo stage of development with many areas still to be worked out. Cost and experience may indicate higher levels of patient care and change the final picture in relation to serving the medical needs of patients.—*Edward J. Thoms*, administrator, Manchester (Conn.) Memorial Hospital.



The heart of a hospital lies in the understanding and skill of the many people comprising its staff. It is embodied in the attention and care given to each patient, young and old, by the doctors, nurses, laboratory and research technicians, and medical aides who dedicate their efforts to improving the health standards of the nation.

The heart of a hospital is reflected in the confidence which Americans everywhere place in the hospital team.

Training and experience offered by hospital careers make them among the most rewarding of occupations, providing opportunity and satisfaction to those who wish to follow in a selfless tradition.

On the occasion of National Hospital Week, we salute those who follow "Careers That Count."

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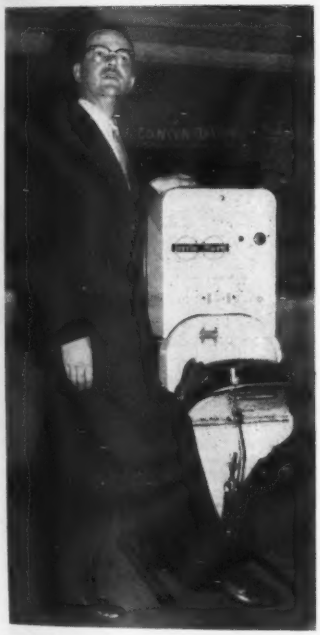
Boston Hospital, American Sterilizer Hold Symposium on Sterile Technic

• A symposium on professional hospital technics and procedures was given recently in the Dowling Amphitheater of Boston City Hospital. It was sponsored by the administrative and nursing departments of the hospital and presented by the research and technical projects divisions of American Sterilizer Co. which provided the equipment for the demonstrations.

(Continued on next page)

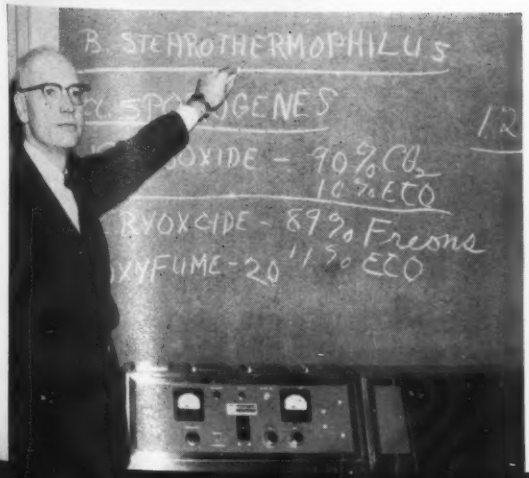
Left: Darrell L. Gifford (l.), manager, technical projects division, American Sterilizer, who spoke at the two-day symposium, poses with John F. Conlin, M.D., director, Boston City Hospital, who opened the meeting.



Right: The process of air elimination in a dressing sterilizer is illustrated with a plastic model. Dogulas M. Fish, manager of the sterilizer division, points out proper loading of items.

Left: Facility for washing and sanitizing of bedpan is demonstrated by D. C. Schaper, technical projects division.

Below: Robert S. Carlson, table and light division manager, and Marilyn Reily, student nurse at the hospital, illustrate proper positioning of patient for gynecologic surgery, one of several positions possible with operating table shown.



Left: John J. Perkins, American Sterilizer director of research, describes various agents used in gas sterilization, and outlines methods of hot air and steam sterilization.

BOSTON HOSPITAL continued

About 900 hospital people, most of them from the New England area, attended the sessions which included lectures and demonstrations on the operating room suite, central service department, utility room, and milk formula laboratory.

A special program for directors and personnel of plant operation was held in the hospital's Thorndike Amphitheater.

Among the speakers at the conference were John F. Conlin, M.D., director, Boston City Hospital; Elmer Hess, M.D., Erie, Pa., past president, American Medical Association; Darrell L. Gifford, manager of the technical projects division, and John J. Perkins, director of research, both of American Sterilizer Co., and other members of the company's technical staff.

Left, top: The correct loading of patient equipment in a utensil washer and sanitizer is demonstrated by D. C. Schaper. Rack is placed in the unit and then loaded with the equipment to be washed.

Left, center: Arlene Howe, nurse consultant, American Sterilizer, demonstrates the proper packaging for sterilization of gloves to be used in surgery and in the nursing units.

Left, bottom: Other American Sterilizer staff members who participated in the symposium were Edna A. Prickett, director, Amsco nurse consultants, and Clark S. Davis, research public relations coordinator.

Below, right: Marie Dzupin, nurse consultant, points out storage facilities of utensil washer and sanitizer. Storage space and washing unit are combined and enclosed in stainless steel casework.

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Hospital's Responsibilities, Care Categories Discussed at Mid-West

TOPICS' report on the 30th annual Mid-West Hospital Association convention, Kansas City, Mo., March 24-26

Lists Types of Accommodations In Changing Pattern of Care

Progressive Care Basic to Philosophy Of 'Right Patient in Right Bed'

A new philosophy is emerging in the hospital field. It is expressed in such phrases as "tailoring the facility to meet the needs of the patient," or "the right patient in the right bed." It is highly probable that as this philosophy spreads it will have an important impact on both community planning and facility design.

What are the various types of beds, and how do they fit into the new philosophy?

(1) The recovery-room bed. Today the recovery-room is standard practice in all hospitals and has been improvised in many others.

(2) The critical-area bed. Whether the critical area is used only for postoperative surgical patients or for both surgical and medical cases, the basic layout, equipment, and objectives remain the same. One specially trained nurse with proper subprofessional personnel and medical assistance close at hand can take care of four to six critically ill patients.

(3) The average-care bed. The "normal" care area will continue to be the largest in the general hospital, but with the seriously ill patients moved to "critical" areas, the units will be different from typical nursing units today. Patients will require only routine nursing care, most of which can be given by practical nurses and aides.

(4) The minimal-care bed. Patients in the minimal-care area are, for the most part, convalescents from other areas of the hospital or patients admitted for diagnosis and medical evaluation. Studies now in progress indicate that such units can be built at far less cost and that operating cost per bed may be only about one-third that of the average per diem cost in the general hospital.

(5) The extended-care bed. The modern chronic-disease hospital might more properly be called an inpatient rehabilitation center. Costs of construction and operation are somewhere between those of the general hospital and the nursing home.

(6) The nursing-home bed. State licensure laws are gradually upgrading the quality of both physical facilities and professional care. Since 1954, 99 nursing-home projects have been approved under the Hill-Burton program.

Making a last minute check of the program just before opening of 30th annual meeting of Mid-West Hospital Association are (l. to r.): Bryce L. Twitty, administrator, Hillcrest Medical Center, Tulsa, Okla., outgoing president; Robert E. Adams, administrator, Research Hospital, Kansas City, Mo., chairman of local arrangements committee; and Mrs. Margaret Barber, Kansas City, Mo., executive secretary of the 800-member association.

New officers of Mid-West Association glance over their schedules, during pause at meeting. James G. Carr, Jr. (l.), administrator, Memorial Hospital of Natrona County, Casper, Wyo., was installed as president, and Herbert A. Anderson, administrator, Lincoln (Nebr.) General Hospital, was named president-elect of the 7-state group.

(7) The home-care bed. Although this type of bed is said to be the least expensive to provide and to service, it is the one which has been used the least in this country. Any community would do well to explore this possibility as a means of reducing the need for more hospital beds.

Excluded from these categories, of course, are facilities for the normal obstetrical patient. Adjunct to them is the provision for outpatient care, including rehabilitation.

Basic to the philosophy of the right patient in the right bed is the free interchange from one facility to another as the patient's needs change. If progressive care is to be successful, the medical and nursing staffs must be sold on the idea; then, the community and the patients must be convinced. Among problems of internal administration are the movement of patients between areas, revised staffing patterns, and employee assignment.

A research project in progressive care is now being conducted in co-operation with the Manchester (Conn.) Memorial Hospital.—*Vane M. Hoge, M.D.*, chief, Division of Hospital and Medical Facilities, U.S. Public Health Service, Washington, D.C.

Lists 10 Hospital Responsibilities Which Must Be Co-ordinated

Suggests Evaluation of Patient Records If Hospital Expansion Is Considered

The hospital's role can be defined as including a series of separate responsibilities which are to be co-ordinated into a working unit. I suggest we view the hospital's responsibilities as:

(1) A diagnostic and treatment center for ambulatory patients.

(2) An emergency center.

(3) An inpatient-care facility.

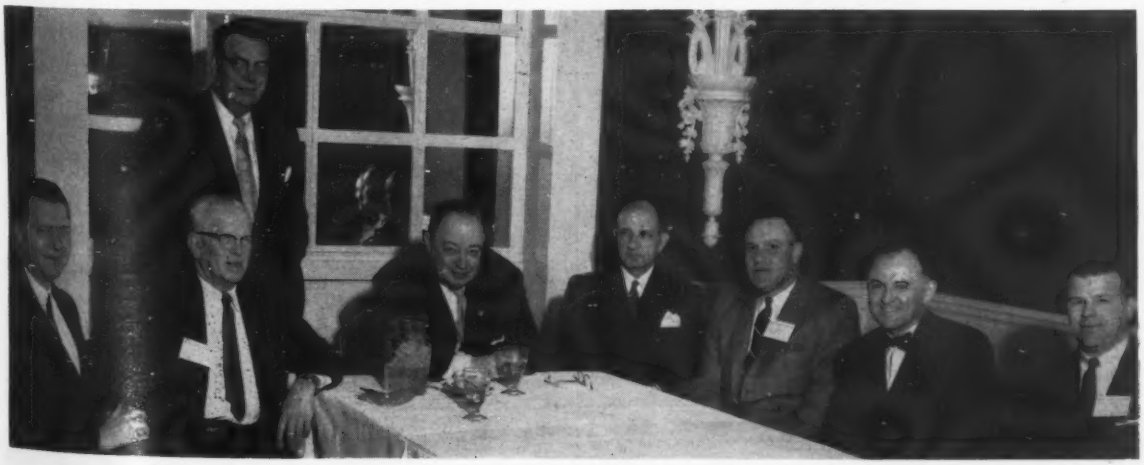
(4) The sponsor of a home-care program.

(5) The provider of nursing-home services. Hospitals, especially those considering expansion, may find an evaluation of patient records over a period of several months very enlightening. Such an examination is the only sure way of determining how many, if any, patients could be cared for in a non-hospital setting.

(6) The provider of hospital care for the chronically ill. To meet the needs of such patients, the

(Continued on next page)

Mayor H. Roe Bartle (fourth from left), Kansas City, Mo., met with hospital leaders at breakfast conference during convention to discuss city problems of hospital operation. With him, from left, are: Ray E. Brown, superintendent, University of Chicago Clinics, a past president of the American Hospital Association; Ray Amberg, director, University of Minnesota Hospitals, Minneapolis, president-elect, AHA; Walter Reich (standing), chairman, board of trustees, Research Hospital, Kansas City, Mo.; Mayor Bartle; Bryce L. Twitty, Tulsa, Okla., outgoing president, and James G. Carr, Jr., incoming president, Mid-West Association; Edwin L. Crosby, M.D., executive director, AHA; and Robert E. Adams, administrator, Research hospital.



hospital must establish much more than a nursing unit for long-term care patients. In most instances, it must develop a separate department and a staff trained in understanding the needs of such patients, and provide equipment, facilities, and services necessary to rehabilitate such persons so that they can be discharged to as productive a life as possible.

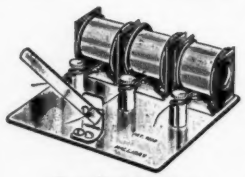
(7) A psychiatric-care facility. The Hill-Burton program has approved aid to assist in construction of 165 general hospitals which include such units.

(8) A provider of rehabilitation services. While it is not necessary or even advisable for every hospital to provide a comprehensive rehabilitation unit, every hospital should include the rehabilitation services which the acute and the convalescent patient requires. As a minimum, every hospital should consider establishing a department of physical medicine.

(9) An active participant in the community public health program. Many hospitals could expand their role in health education with a minimum of time, effort, and expense. For example, visual aids or posters to aid recognition and prevention of specific diseases could be displayed for both patients and visitors.

(10) The operator of special clinics.—*John D. Thewlis*, chief, operations branch, Division of Hospital and Medical Facilities, U.S. Public Health Service, Washington, D.C.

TO SAVE OPERATING ROOM TIME and TO HELP THE SURGEON



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Academy Asks Two-Year GP Residency Instead of One-Year Rotating Internship

Secretary Tells Gains Since 1947 Founding; 10 Named Winners of $1,000 Scholarships

A report prepared by the Commission on Education of the American Academy of General Practice recommends that a two-year general-practice residency replace the one-year rotating internship taken by medical-school graduates who plan to become family doctors.

The report, presented at the Academy's 10th annual scientific assembly, in Dallas, Tex., in March, adds that the young doctor should also be able to gain additional experience via in-hospital teaching programs conducted by senior staff members.

The Commission on Hospitals, in another report given at the meeting, asked once more that general hospitals abandon arbitrary restrictions against family doctors and open their doors to all qualified physicians.

However, the tendency to exclude general practitioners from hospital staffs has been largely overcome since the Academy's founding in 1947, according to Mac F. Cahal, executive secretary.

Besides access to hospital facilities for "generalists," two other major objectives of the Academy have been achieved, Mr. Cahal said. One was improved orientation for general practice in undergraduate education. Last year 22 of the 85 medical schools were conducting special programs to prepare students for careers in general practice.

Another objective was establishment of residencies for graduate training in general practice. Today 188 hospitals offer approved general practice residencies.

Ten future family doctors received $1,000 scholarship awards to start residency training in July. The awards are from a fund established by Mead Johnson & Co. Recipients are:

Harlie Bearden, M.D., intern, U.S. PHS Hospital, New Orleans.

William R. Bonnington, M.D., intern, Madigan Army Hospital, Tacoma, Wash.

Samuel Sledge Holladay, Jr., M.D., intern, Charity Hospital, New Orleans.

Albert L. Huber, M.D., intern, Geisinger Memorial Hospital and Foss Clinic, Danville, Pa.

Talbot Green McCormick, Jr., M.D., intern, John Sealy Hospital, Galveston, Tex.

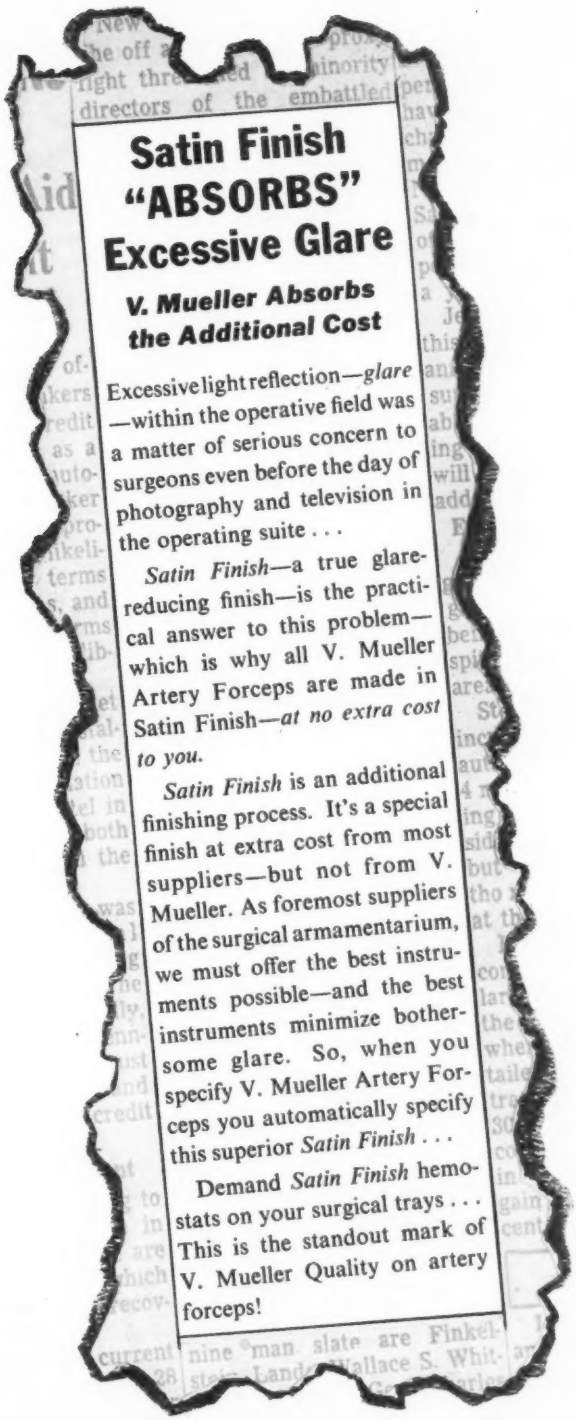
Don Neal Ridgway, M.D., resident, St. Mary's Hospital, Saginaw, Mich.

John Phillip Schlemmer, M.D., stationed at the U.S. PHS Hospital, Staten Island, N.Y.

Robert D. Schrantz, M.D., now with the 7505th USAF Hospital in England.

C. Robert Swanbeck, M.D., now at Fort Riley, Kans.

John William Vinzant, M.D., intern, University Medical Center, Little Rock, Ark.



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1. Benson, Margaret E.: **Am. J. Nursing** 57:1134, Sept., 1957.

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Muscle Transplant, Surgery for Angina Among ICS Lecture Subjects

A TOPICS report on the 11th international congress of the International College of Surgeons in Los Angeles

New Procedure Enables Correction Of Persistent Cases of Clubfoot

Metal Fixation Not Necessary; Bones Held in Place by Notches

A surgical procedure for the correction of persistent clubfoot not responsive to the usual forms of treatment has been used with good results in 33 of 45 patients.

Of the remaining 12, seven had satisfactory functional position, and five were unchanged after the surgery.

The technic was applied in the correction of talipes equinovarus, a type of clubfoot in which the patient walks on the toes and outer side of the foot. In all cases there had been a persistent or recurring deformity of the heel and unsatisfactory response to other forms of treatment. Ages of patients ranged from 6 to 14 years.

In the procedure, the surgeon cuts across the heel bone and brings it together again in a corrected position. It is then held in place by snug-fitting, mortise-like notches in the severed ends of the bone.

Metal fixation is not necessary. The foot is kept in a plaster cast until there is complete healing of the severed site, which takes eight or nine weeks.—*Leo S. Lucas, M.D.*, clinical professor of orthopedic surgery, University of Oregon Medical School, Portland, and *Jack B. Watkins, M.D.*, Spokane, Wash.

Surgical Technic Provides Relief From Pain Due to Angina

Less Risk, Lower Complication Rate Than Previous Procedures, Says Surgeon

A new surgical technic developed for the treatment of angina pectoris and vascular insufficiency of the upper extremities permits complete removal of the sensory and motor pathways to and from the heart. This insures complete or nearly complete relief of the disabling pain due to angina, and also eliminates the undesirable action of the motor nerves.

Division of the sensory pathways makes the patient permanently free from pain and the fear of it. The procedure carries a lesser risk and lower operative complication rate than any other surgical procedure now advocated for the treatment of angina pectoris and coronary heart disease.

Rehabilitation of the patient is more rapid. Many patients previously incapacitated are now restored to a nearly normal socioeconomic life.—*Louis T. Palumbo, M.D.*, clinical professor of surgery, State University of Iowa College of Medicine, Des Moines.

Cancer Cells Destroyed by Needle Act as a Sort of Vaccine

Antibodies Destroy Rest of Active Cancer

In more than half of 350 cases of cancerous growths treated by electrical coagulation, later tests indicate no trace of cancer remaining.

Apparently, when cancer cells in a tumor are "cooked" with an electric needle, they act as a sort of vaccine; antibodies are produced which attack and destroy the rest of the active cancer.

In animals in which we have induced cancer by injections into one or more of their organs, we have also found that when blood is shut off from the cancer after the "cooking" process, the cancers have disappeared even after repeated tests in later years.

This theory has not been completely proved. We are just getting started. This is a trial that may lead us to something important.—*Alfred A. Strauss, M.D.*, senior attending surgeon, Michael Reese and Mount Sinai Hospitals, Chicago.

Polyps of Colon Usually Forerunners of Malignancy

Early Detection, Removal Urged To Avoid Development of Cancer

Polyps of the colon usually are precursors of malignancy. Their early detection and removal could help to achieve a reduction in the 2,500 deaths monthly from cancer of the colon.

Polyps can be found by visual examination in about three-fourths of cases, and in nearly all of these removal may be accomplished by a simple office procedure. Others may be discovered by x-ray.

At least 10 percent of people over 40 carry precancerous polyps. Each polyp of the colon which originates in the mucous membrane is destined, if the individual lives long enough, conditions become right, and the polyp is subjected to a malignant stimulus, to

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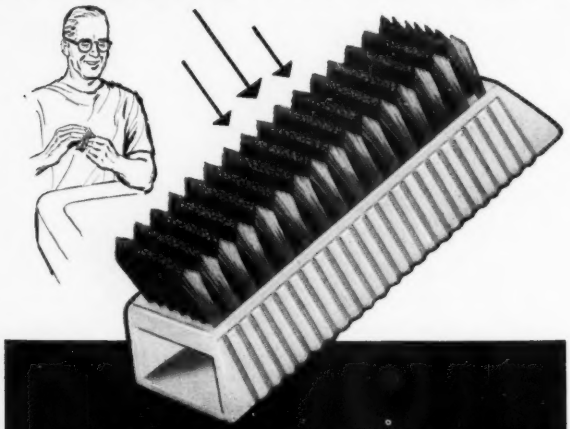
THE STRONGER THE TUFT LINE...



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be the origin of cancer. The inciting factor or the point in the life of the polyp at which it becomes cancerous has not been determined.

Symptoms of polyps are blood in the stools in varying amounts, change of bowel habits, presence of excess mucous, pain which is generalized and vague in character, nausea, or weakness.—*Neil W. Woodward, Sr., M.D.*, associate professor of surgery, University of Oklahoma School of Medicine, Oklahoma City.

Physical Disabilities Observed in High Percentage of Auto Crash Victims

Interference with Spinal Resilience May Increase Vulnerability to Injury

Fifty-nine of 155 persons involved in automobile accidents causing serious injuries to spine, pelvis, femur, or knee joint had some physical disability at the time of the crash, we found in a study at the Missouri Methodist Hospital.

Cervical arthritis is common among drivers who become involved in injury-producing accidents. Many such accidents occur at intersections where visual activity is of paramount importance to avoid angular and rear-end collisions. Cervical arthritis can interfere enough with the required visual function to produce greater-than-chance accident frequency.

Other disabilities noted in the study included heart or blood-vessel diseases, respiratory disease, diabetes, and alcoholism.

The spine acts as a curved spring. Any physical interference with its resilience may increase its vulnerability to injury under crash conditions. Also, any interference with hinge points, especially at the hips, may transmit abnormal forces to the spinal region. A safety belt worn too high on the abdomen interferes with proper hinge or pivot action at the hips under conditions of forward deceleration.—*Jacob Kulowski, M.D.*, Missouri Methodist and St. Joseph's Hospitals, St. Joseph, Mo.

Double Muscle Transplantation Relieves Paralysis of Trapezius Muscle

Successful in All 50 Cases

A double muscle transplantation in polio victims with paralysis of the trapezius muscle has restored the ability to rotate the shoulder blade.

Success has been achieved in all 50 cases in which this method has been tried. Arm action is restored to almost normal. Farmers have been able to return to heavy work. Some patients have resumed skiing. Women can comb their hair and even zip dresses up the back.

In the procedure, although it is called a transplantation, two muscles in the back are attached at only one end, and the loose ends replaced where they make the shoulder blade more active.—*Max Lange, M.D.*, professor of orthopedic surgery, University of Munich, Germany.

(Continued on page 67)

Adequate CAA Medical Department Asked in Aero Medical Resolution

• A resolution calling for establishment of a "completely adequate and competent medical department" in the Civil Aeronautics Administration, directly responsible to the CAA administrator, was passed unanimously by the Aero Medical Association at its 29th annual meeting in Washington, March 24-26.

Describing the present medical department as "grossly inadequate as to numbers of physicians and other personnel," the resolution asked for an adequate budget to carry out the department's functions, such as periodic examination of fliers; selection, training, and supervision of examiners; research in the noncompetitive areas of civil aviation medicine, and the examination of accidents, including the pathology of the deceased in fatal accidents.

The resolution also instructed the association to petition Congress to enact appropriate legislation "to accomplish the purposes of this resolution for the protection of the public."

Approximately two weeks later the American Medical Association announced its active support of Senate Bill 1045, which would establish a separate medical office within the CAA. Provisions of the bill include transfer of the rule-making authority for medical standards from the Civil Aeronautics Board (which does not have qualified medical personnel) to the CAA; creation of the "Office of Civil Air Surgeon," directly responsible to the CAA administrator; and establishment of a Civil Aeronautics Medical Research Laboratory.

More than 1,300 persons registered, and 30 countries were represented. New association president is Brig. Gen. M. S. White, USAF (MC), director of medical staffing and education for the Surgeon General, U.S. Air Force, Washington, D.C.

Modified Ejection Device Enables Escape Of Pilot Trapped Under Water

Effective to Depths of 100 Feet

A cockpit escape apparatus has been perfected which allows a pilot trapped underwater to surface safely.

The device is a modification of the standard air-ejection apparatus to accommodate underwater entrapment, even to depths of 100 feet. The escape mechanism works whether the submerged plane is upside-down or in any other position.

The relatively simple modifications involve making the firing mechanism water-tight and increasing the ejection charge.

In aircraft equipped with breakable canopies over the pilot, the pilot is blown right through the canopy. A pilot in a plane equipped with a rigid, reinforced canopy must wait until the cockpit is half-filled with water. Then he opens the canopy and fires himself out.—*Lt. Cmdr. John S. Rawlins, RN,* Royal Air Force Institute of Aviation Medicine, Farnborough, England.

Processes to Make Wastes into Food Needed for Prolonged Space Travel

Impossible to Carry Enough Food Supplies on Long Trips

One of the most pressing problems which must be solved before long space trips are possible is development of a process to make food during extended voyages.

It will be impossible to carry along enough food supplies on such trips. Therefore, methods must be developed to recycle human wastes into food, just as is done on a much larger scale by nature.

The Naval Air Development Center, Johnsville, Pa., has prepared an as yet untested synthetic "space diet." It is not particularly palatable and might best be described as enriched sugar water thickened with shreds of paper towel.—*C. C. Clark, Ph.D.,* Aviation Medical Acceleration Laboratory, U.S. Naval Air Development Center, Johnsville, Pa.

Conversion of Water to Carbohydrates Needed to Avoid Water Accumulation

One problem to be solved for lengthy space flights is how to convert water back into carbohydrates.

The problem is vital because the human body converts small amounts of its food into water. Though solid wastes can be recycled into food, as plant nutrients, nothing can be done about the water.

Theoretically, if the food-to-waste-to-food processes were continued indefinitely, everything in the biological system would turn to water.

Since space travel, as presently envisioned, must be a closed system—one in which nothing is added or disposed of during flight—water accumulation could be a real hazard in space trips lasting several years,

(Continued on next page)

such as to the more distant stars. The excess water might turn a space vehicle into a swimming pool.

This problem is being investigated by Dr. Hans Claman, professor of biophysics at the Air Force School of Aviation Medicine. — *Hubertus Strughold, M.D.*, medical research advisor to the commandant, Air Force School of Aviation Medicine, Randolph Field, Tex.

MATS Completes 10th Year; Proves Safety of Air Transport of Patients

Prepares to Take Over Complete Control of Patient Handling

By its tenth anniversary on June 1, Military Air Transport Service will have transported more than 400,000 patients within its global system. Experience has shown that essentially any patient who is fit to move by any means can be safely and quickly transported by air.

MATS is preparing to assume the operation of casualty staging units at several of its major domestic air-evacuation terminals. These units will receive patients previously placed in air-evacuation channels and process them medically and administratively for further movement to definitive treatment facilities. They will also provide limited medical care and emergency treatment for patients awaiting movement, as well as transportation of patients to and from the aircraft and litter-bearers to load and unload patients.

Operation of these units will enable MATS to control patient handling entirely, from origination to destination hospital.—*Col. L. R. Braswell, USAF (MC)*, Headquarters, Military Air Transport Service, Scott AFB, Ill.

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New Oxygen System Said to Permit Normal Breathing During Flight

Excessive Exhalation Resistance Impossible, Speaker Says

A new system is now available which will truly permit normal breathing while in flight.

Previous methods of delivering supplemental oxygen to pilots have not been entirely satisfactory. Either the user has to inhale against excessive resistance or he gets his oxygen stuffed down his throat under "safety pressure." The oxygen supply hose always comes up the front of the pilot, where it is likely to hinder him from turning his head, tangle on his parachute harness, or be removed by windblast when the pilot is ejected.

In the mask-mounted system, with the regulator held directly in the A-13 mask, the many exhalation problems that arise are generally caused by the almost complete lack of volume between the regulator and the inlet check valves. Use of this type of regulator requires excessive exhalation pressures — up to eight inches of water at sea level. Consequently, pilots purposely leave their masks on loosely, inhaling a little as the oxygen goes by and exhaling out the sides of the mask.

Safety pressure forces oxygen overboard constantly, with the result that oxygen consumption is 60 percent greater than that of the proposed system. We can only guess how much of a pressure breathing schedule would remain at high altitude with this dangerous condition existing.

The proposed system utilizes a standard A-13 mask with one modification: removal of both inlet check valves. The regulator is approximately 1-¾″ in diameter, less than 1″ long, exclusive of the adaptor. Its weight is 60 grams, equal to 6″ of large corrugated hose, or 7.2″ of ⅜ I.D. hose.

So-called safety pressure is lacking, because inboard leakage is almost non-existent, as a result of low suction pressures in the oral nasal cavity, and because omission of safety pressure minimizes the chance of hyperventilation, prevents useless waste of oxygen, allows easier radio transmission, and lets the pilot breathe naturally.

The regulator communicates directly with the oral nasal cavity, since there are no check valves. This permits full utilization of the regulator's extreme sensitivity. The regulator can leak or even fail wide open, and mask pressure will be no higher than normal exhalation. It is impossible to get excessive exhalation resistance.—*Leon Jones*, senior development engineer, Robertshaw-Fulton Controls Co., Anaheim, Calif.

Airline Food Service Offers Mobility, Efficiency, Economy

By Joseph T. Greco*

• Good patient food service can be provided through the combination of two important ingredients—palatable food (effectively processed and served) and effective supervision. The first ingredient can be provided by the use of quality raw food products, by the efficient utilization of personnel, and by the prompt delivery of an attractive tray, to the patient, with hot foods hot and cold foods cold.

The other ingredient—effective supervision—in a large measure has been found in airline food service as adapted to patient food service in the hospital.

Airline food service, as we know it today, was inaugurated by United Air Lines early in 1930. Until 1946, its growth and refined development were limited to the field of commercial aviation. In that year, Frank R. Bradley, M.D., director of Barnes and affiliated hospitals, while flying between New York and Pittsburgh on a TWA flight, observed the plane's stewardess as she served a large number of passengers in a relatively short period of time. This observation was the beginning, by Barnes Hospital, of a long study to adapt airline food service to patient food service in the Hospital.

Finally, in September, 1949, the first hospital application of airline food service to patient food service was made in Barnes Hospital. Since then, many commercial applications of this version of centralized food service have been developed.

During the early stages of the Barnes conversion from decentralized to centralized food service, equipment was designed and redesigned. Trial-and-error procedures were applied. Some of the skeptics wondered why an institution should be interested in sponsoring such a drastic departure from the traditional type of food service. The value of those research studies, as a means of promoting better food service, has become apparent.

Those closely associated with the development of the system are agreed that one of the chief reasons for the success of the project lay in the flexibility of its total application. Airline food service suggested an "engineered approach" to the functions of food assembly and food service to the patient. To begin with, food-service personnel could be pooled, for they could be utilized in production assembly, cold and hot-food assembly, cart transportation service, final tray assembly, bedside food-delivery service, return cart transportation, and central dishwashing functions. This flexibility in utilization of personnel ensured the provision of peak performance at all times and the achievement of real savings in personnel manpower.

Food processing and food service, as demonstrated by Barnes Hospital, has achieved, in a relatively complex situation, a degree of simplicity. A straight-line traffic-flow pattern, similar to those of straight-line assembly production systems, has been adopted. Through a systematic plan of progression, raw food products are received at one end of the assembly line, and processed food products are delivered to the patient at the other end of the assembly line.

This system of traffic flow, from raw food receipts, to pre-preparation, to processing, on to assembly, and finally to transportation, and patient service, was the result of profit engineering—a unique contribution to successful food-service operation. Profit engineering called for imaginative, pre-planned studies of function, space allocation, and traffic flow. It required discovering, improving, creating—food service was impelled toward greater attainments. It proved that engineering principles of assembly-line production could be applied to food preparation, food processing, and food service.

It showed that creative imagination and engineering skills, when applied to food processing and service, could provide improved control and speedier handling of food products. It proved that top performance in service could be achieved while raising efficiency in manpower, with a net result of savings in operational cost.

When the principles of profit engineering were applied, they guaranteed, through centralization and constant supervision, the elimination of all the guesswork in processing, in portion control, and in calculation.

ASSEMBLY

Since assembly was to be the operating hub of airline food-service activities, our analytical approaches to planning for this area were calculated (1) to assure maximum flexibility in providing regular and modified diets; (2) to permit space-saving assembly functions, and yet (3) to allow for economical operation.

(Continued on next page)

*Associate director, Barnes Hospital, St. Louis.

Today, effective centralized control of the whole operation of assembly for some 3,000 meals a day has provided dramatic savings in dietary manpower. Besides savings in personnel, the system of central assembly enabled a realization of balanced distribution in work load, with all personnel operating at peak efficiency for maximum economy.

Assembly operation for airline food service in the hospital involved a unique deviation from assembly operations normally found in other versions of centralized food service. In the Barnes set-up, assembly operations were broken down into three parts: (1) production assembly, or pre-assembly; (2) cold and hot-food assembly, and (3) final tray assembly. The first two functions are supervised in the main kitchen, and the latter is accomplished in the floor galleys on the various divisions of nursing service.

The plan for production assembly (pre-assembly) and hot and cold-tray assembly, in the Barnes food-service operation, provided an unusual range of design and function potential. The entire area layout was adjusted to take on a remarkably new flexibility so as to provide unlimited opportunities for modern functional styling, both in equipment and in remodeling.

Section areas were designed to provide, during peak-load periods, the proper flow of individual servings in food products and of food-service supplies from production assembly to tray assembly. Yet, simplicity in function, so that even an inexperienced crew could master the technics quickly, was a major factor that had to be taken into consideration.

It was visualized that pre-preparation would cut tray-assembly time and lower food-service cost. It was thought that, with proper programming, the many "pluses" of balanced distribtuion in dietary work load would negate the advisability of scheduling personnel by split shifts or of scattering them to some 34 decentralized kitchen serving areas. Centralized airline food-service assembly, as envisaged, was to provide the means for constant eight-hour work periods and conditions allowing for almost continual supervision.

Production Assembly

Production Assembly: Central preparation and assembly of individual servings of food items and food-service supplies presented a revolutionary concept to patient food service.

It was at this stage of food production that we first applied the theories of balanced distribution of work load so as to begin to eliminate the critical factor of peak and low-demand periods of food-service operation.

In order to assure optimum personnel performance and to provide an economical production operation, some of the food-service personnel were scheduled to production assembly, where collected silverware and bread are cellophane-wrapped and individual servings of cream, butter, salad dressings, and dessert sauces are packaged. These items, when assembled and individually packaged, are collected onto large kitchen service trays on which they are stored (refrigerated if necessary) and held in readiness for the cold-tray assembly section.

Other food items which are individually portioned, processed, and stored in readiness for cold assembly, such as salads and desserts of ice cream, cake, and melons, also are handled by production assembly. In addition, some commercially-packaged items, such as salt, pepper, and jellies, are collected during pre-assembly and are forwarded to tray assembly when needed.

The simplicity as well as the flexibility of activities in production assembly enabled us, generally, to shift personnel quickly from one task in the kitchen to another, and yet, contrary to what might normally have been expected, also permitted us to improve our food-service procedures. We found, however, that certain production areas, such as the butcher shop, the bake shop, the chef's unit, and the salad kitchen, which have all-day activities, functioned much more efficiently with permanent personnel. In these areas the full use of part-time "float" personnel has not been justified.

Regardless of the type of personnel assigned, it was planned that the burden of production assembly was to prepare for immediate assembly, well in advance of bedside delivery, the food requirements of patient meal service. Pre-preparation assured capacity performance of personnel, economical production, and supervised portion control, which has been found to be an essential asset in any food-service department.

Hot and Cold-Tray Assembly: As in production assembly, the activities of cold-tray assembly may be started several hours in advance of patient serving time. This new pattern of pre-preparation in production assembly and in central tray assembly presented a partial solution to some of our problems of supervision over personnel assigned to an unwieldy, inflexible bulk food service.

As in production assembly, a group of food-service workers is assigned to the hot and cold-tray assembly section in which the activities of cold-tray assembly are conducted concurrently with the activities of production assembly.

When the operation of cold-tray assembly is started, assigned bus girls begin supplying the assembly tables with the previously-packaged food items and supplies, such as bread, butter, salt, pepper, and napkins, previously stored on service trays. These items are taken in their storage containers to the assembly tables and assembled onto individual patient trays. The individual assembled tray, in turn, is stored in the refrigerated-tray section of the airline food cart. At Barnes, refrigeration for the cold section of the airline food cart is obtained by the use of dry ice.

Our experience has shown that, after a short period of on-the-job training, an assembly girl can be trained to complete between 60 and 75 trays per hour. Thus, within two to three hours, the output of six assembly tables, properly supplied and staffed, can be geared to the individual tray needs of any particular meal.

Cold Food Trays

Just recently our assembly supervisors applied the general principles of conveyor belts to cold-tray assembly. Simply by abutting two assembly tables together, end to end, we were able to accomplish greater efficiency and, at the same time, achieve a reduction in force.

In the original system one girl assembled trays and one girl placed them into the refrigerated portion of the food cart. Under the slide-conveyor system, two girls function as assemblers, and one girl places the trays into the food cart.

Through this technic, we have increased the cold-tray output during any given period of assembly time. For example, three girls now assemble approximately 100 trays in 45 minutes, whereas in the old system, two girls assembled approximately 56 trays. Projecting these examples for equal numbers of personnel (six for each system), we find we have increased the output by approximately 41 trays per hour.

Some 20 to 30 minutes before mealtime, within the general area designated as tray assembly, individual portions of hot food are served onto dinner plates by another group of food-service workers. These plates are then placed into electrically heated airline food ovens. Liquids, such as soups and coffee, are poured into appropriate electrically heated containers. These two pieces of electrical food-service equipment have become standard commercial airline equipment, used by the various carriers in their food-service operations.

Hot-Food Assembly

CART AND FOOD TRANSPORTATION

Our specially designed food carts, separating cold foods from hot foods, have been constructed so as to provide connections to electrical outlets for the beverage containers and ovens. The latter have been built to maintain temperatures of 150° and higher.

These composite units have become the connecting link between production, assembly, and bedside service. It was at this point that patient food service in the hospital became similar to food service on an airliner . . . that is, food is processed, is portioned and preassembled in the main kitchen, and is transported and served to the patient out of a distant galley located on a nursing division. Airline food service in the hospital was made possible through the adaptation of airline equipment and function.

FINAL TRAY ASSEMBLY

We learned from studies of function that the nursing division galley primarily served the needs of nursing service. We knew that facilities for drinking water, ice, refrigeration, glasses, and other supplies were required for 24-hour nursing care. We learned that airline food service was actively engaged on the division three times a day for a total of approximately four hours. We demonstrated that with airline food service, patient meals could be dispensed directly from the food cart as it was rolled down the corridor. Thus, so far as the dietary service was concerned, the galley was not a necessity.

We determined that the size of the nursing galley could be planned according to individual needs and desires. We found that a galley constructed in an area

(Continued on next page)

of 9 x 12 feet met our needs quite satisfactorily. In this area we placed standard household equipment such as kitchen cabinets, sink with disposal unit, a refrigerator, and a double-element electric hot plate. The equipment was arranged in a straight line on one side of the 12-foot wall. The opposite wall was left open for access into the galley.

In order that the area might be shut off when not in use, we utilized the accordion-type door. Because nursing needs for ice were greater than the output capacity of a household refrigerator, we placed an ice-cube-making machine in the galley.

As serving time approaches, the food cart of a nursing unit is inspected and dispatched from the main kitchen to its destination by the dietitian assigned to assembly. From the time of dispatch until the cart and its personnel return to the kitchen, the responsibility for their supervision is assigned to the appropriate therapeutic dietitian and her food-service supervisor. Upon arrival at the nursing galley, the food cart is plugged into an electrical outlet which provides the energy necessary to maintain the desired temperatures of heat for hot foods and beverages.

With the combining of hot foods onto the cold-food tray, final assembly is accomplished in the nursing galley by food-service workers assigned to the airline carts. Usually, one girl is assigned the function of final tray-assembler and another girl the function of tray-passer. This procedure results in very little time and temperature loss between food assembly and service to the patient.

Cart Inspection

Further refinements in airline service for efficiency led to the development of the team approach to assembly and service. Under this procedure, one girl is assigned to each cart and from one to two "float" girls, depending upon the number available, are assigned to cover some three to four nursing divisions. As in routine service, the carts are taken to their respective galleys. Here, they are plugged into electrical outlets for heat energy.

The team, composed of assigned and float personnel, having been instructed previously as to order of service and final assembly, is told to report, after appropriate placement of the carts, to the first galley of final assembly. At this station an assigned worker and an additional member of the team are given the task of tray assembling. The remaining members of the team are given the task of tray passing.

Final Assembly

When all trays have been assembled and passed, the team, with the exception of the assigned girl, is sent to the next galley of service. The girl who has been left behind is given the assignment of passing coffee. After she has served the coffee, she rejoins her team, and may then be given the duty of tray-assembler or tray-passer.

This procedure is continued until all divisions have been served. The assigned girls then return to their respective divisions, where they collect, scrape, and pre-wash assorted dishes and trays. The float girls return directly to the main kitchen for further assignments.

CENTRAL SANITIZING

When all trays and dishes of regular and modified diets have been scraped and pre-washed, they are loaded onto the airline food cart. Trays and dishes of calculated diets are loaded, intact, onto the carts also. The galley is then cleaned by food-service workers assigned to the division, and the cart is returned to the central dishwashing section of the main kitchen by the worker previously assigned to the unit.

At this location, trays, dishes, and racked glasses are loaded onto mobile landing tables. Calculated diet trays are unloaded in a special area, in which they are weighed, scraped, and pre-washed. They are then taken to the appropriate landing tables for trays, dishes, and glasses. All silverware is dumped into a mobile sink, where it is pre-soaked before being washed.

As the food cart is pushed along the unloading line, other items, such as food ovens, liquid containers, and

(Continued on page 40)

Barnes Hospital—Main Kitchen
1. Day storeroom
2. Bake shop
3. Bake shop refrigerator and freezer
4. Butcher shop
5. Butcher shop refrigerator and freezer
6. Coffee production
7. Vegetable preparation
8. Bulk vegetable refrigerator
9. Salad preparation
10. Bulk salad refrigerator
11. Prepared salad storage
12. Special diets
13. Cold-tray assembly
14. Chef's kitchen
15. Chef's refrigerator
16. Hot-food assembly
17. Mobile landing tables
18. Central sanitizing
19. Steam cleaning
20. Cart storage
21. Pot and pan wash-up room
22. Female locker and rest rooms
23. Male locker room
24. Uniform room
A. Production supervisor
B. Assembly supervisor
C. Administrative clerk
D. Storeroom clerk
E. Associate director's office
Food Cart Entrance to Main Kitchen
Exit Finished Food Product to Nursing Galleys

Cart Cleaning and Inspection

FOOD SERVICE

(Continued from page 38)

juice jars, are removed. By the time the cart has been pushed to the end of the line, it has been stripped of most of its food-holding equipment (the only exception being the cold-tray storage section). The cart (now an empty shell on wheels) is steam-washed, dried, and returned to its storage station in the tray-assembly area.

At the point of entrance to the dishwashing area, the responsibility for supervision over the carts and service workers is returned to the dietitian in charge of tray assembly. The remaining group of food-service workers, not previously assigned to duties in production or hot and cold-tray assembly, is given duties in the sanitizing area. Some are assigned to the loading of soiled dishes into the flight-type dishwasher; some are assigned to the duty of washing glasses, while others are given the job of washing food ovens and liquid containers.

At the "sanitized" end of these cleaning tasks, still another group of workers is assigned the duty of inspecting, racking, and returning accepted dishes, trays, glasses, and silverware to the assembly unit of the main kitchen. Rejected items are placed into mobile sinks containing de-staining and detergent reagents.

MOBILITY WHEREVER POSSIBLE

Profit engineering, as applied to our sanitizing area, demanded flexibility and mobility. It called for advanced design in equipment structure and plant layout. Again, we envisaged drastic departures from conventional methods normally applied to dishwashing operations. Heavy functional equipment, by necessity, had to be placed permanently; however, other equipment was to be movable.

Thus, while the dishwasher and multi-compartment sinks were located in fixed positions, landing tables, soak sinks, and clean dish-storage racks were designed to be mobile and flexible in function. This mobility in the dishwashing room provided for better control in sanitation, and at the same time enabled the achievement of optimum efficiency in function.

Speed in performance, sanitation, and efficiency were the three primary goals that we desired to achieve in the sanitizing area. The ease with which we achieved them was almost unbelievable.

When a landing table is loaded to capacity, it can be rolled up to the dishwashing machine for unloading. When the contents are unloaded into the washer, the table is rolled away and another table rolled up in its place. With the use of this procedure a complete inventory of a particular item can be washed at one time, yet the loading end of the dishwasher is not cluttered with other items which could be loaded on a permanent landing table. Thus, all trays can be washed at one time; all glasses can be washed at one time, and so forth.

Obviously, at the unloading end of the dishwasher, greater speed can be achieved in the inspection and the racking of the washed items. The sanitized items are racked onto compact mobile units, which when filled are rolled to the assembly unit. In this way, we were able to turn storage space into workable areas. We were able to remove items from the dishwasher and place them from storage to service in one on-the-spot operation—a smooth, effortless transportation from the dishroom to assembly station. In other words, we have been able to supply the assembly table right from the storage truck.

POT AND PAN WASH-UP

Plans for our pot and pan wash-up room were along lines similar to those of our central sanitizing area. With mechanization, controlled functional traffic flow, and wheeled storage racks, we decided that one clean-up area room could serve all production units of the main kitchen. The pre-wash sink was therefore designed with two high-pressure, high-velocity pumps which could provide continual agitation of the wash water. After the pre-wash period, all pots and pans are placed into an automatic pot-and-utensils washer for additional washing and final sanitation.

Again, we have applied the principles of mobility to heavy-duty work area. With the exception of the pre-

Equipment and Dishwashing

wash sink and the commercial pot-washer, all equipment of the wash-up room is mobile. As in the central dishwashing room, we are able to remove from the washer and place from storage to service in one on-the-spot-operation. Bakeshop pans are returned to the bake shop via mobile storage racks, as are pans for the chef's kitchen, the butcher shop, and other areas of the main kitchen.

HOUSEKEEPING

Because of our emphasis on environmental sanitation, it was decided that the department should organize and maintain its own housekeeping section. Porters

Cleaning Equipment

were trained to handle problems normally found when cleaning kitchen facilities and equipment. A housekeeper was employed to supervise the personnel and maintain a routine cleaning schedule. In addition to brooms, mops, and mop trucks, the housekeeping section has its own buffing machine, water vacuum machine, and steam-cleaning guns. A steam regulator with quick coupling connections enables the porter to move from one area of the kitchen to another.

Our experience with steam cleaning was so successful that we designed and constructed a new area restricted primarily for steam-cleaning all movable dietary equipment, such as food carts, work tables, storage bins, and butcher saw. So that we could steam-clean floors, walls, and fixed equipment, we provided steam outlets in the various sections of the kitchen. Two 55-gallon drums which contain cold water and detergent have been placed on wheels so that they can be moved to any portion of the kitchen.

LOCKERS, REST ROOMS

Since it was our desire to provide continual supervision over the dietary personnel, we believed that our locker and rest-room facilities should be centralized and brought into the department's area. Accordingly, construction has been started on locker and rest-room facilities, which are being located at the entrance of the dietetics department and in the immediate area of the office of the department's associate director. At present we are considering installation of time-recording equipment and a uniform dispensing room.

SUMMARY

Actual performance has borne out our confidence in the ability of airline food service to fit into the modern concept of patient food service in the hospital. Its application has enabled the dietary department to combine proper assembly technics with right control methods under central technical supervision. The result has been the development of better food service and greater operating efficiency.

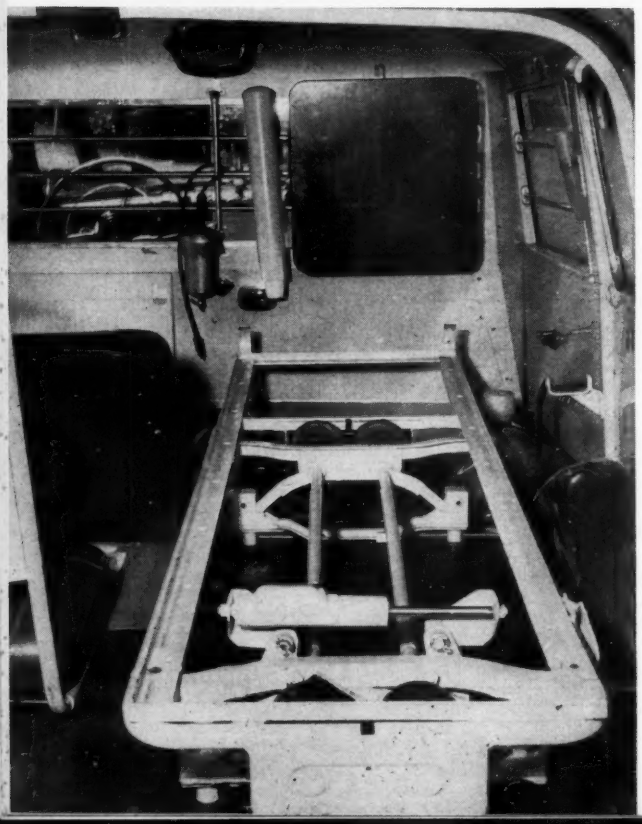
The critical problems of equipment design and functional operation involved in conversion from a decentralized system to airline food service were solved through the application of profit engineering. Imaginative, pre-planned studies of function, space allocation, and traffic flow introduced important advances in food-service activities, advances that boiled down to more efficiency per employee. The employment of new technics such as continuous work flow, central supervision, and prepackaging became keynotes to a simplified assembly-line operation.

Airline food service has provided the three elements necessary to maintain the best in a food service program . . . positive control, top performance, and maximum economy.

"DUXE" NYLON
RESTRAINTS
ARE CLEAN, STRONG, LASTING!
ONE PIECE
2 in. wide, 6 ft. long, metal tipped ends. For stretcher or operating table.
TWO PIECE
2 in. wide, 5 ft. usable length. Ends fasten to side rails. Chair arms, etc.
AUTO SAFETY
C.A.A. anproved quick release buckles. 5500 lb. test. Heavy floor plates and hardware. Easily installed.
Cotton webbing optional at same price.
Special belts to order. Prices on request.
A "DUXE" PRODUCT
Your dealer has it, or, write—
DUXE PRODUCTS
205 Keith Building
Cincinnati 2, Ohio

Above: One of specially-fitted ambulances operated by the Swedish rescue organization Raddningskaren. Organization has membership of approximately 225,000 persons, and performs salvage and rescue activities throughout nation.

Truck-Seat Device Under Stretcher Gives Smoother Ambulance Ride



Interior of ambulance, showing torsion suspension device on which stretcher is placed is shown at left.

• Ingenious Swedes have adapted a torsion suspension, designed to make a truck driver's ride more comfortable, for use under a stretcher in an ambulance, to protect the patient from dangerous jolts and vibrations.

All ambulances belonging to the Swedish rescue organization Raddningskaren have been equipped with the spring suspension. Raddningskaren, which has headquarters in Stockholm, performs rescue operations in all Scandinavian countries and Germany, and has 3,500 aid stations and about 3,000 alarm posts. It also has a modern fleet of helicopters, rescue ships, frogmen, animal ambulances, and service cars for doctors on duty.

All salvage trucks were equipped with the torsion spring suspension under the driver's seat, designed to eliminate approximately 80 percent of normal vibration. Then someone had the thought that the same device* which made the driver's ride more comfortable and less tiring could also be used to give the patient a smoother and safer ride.

Two of Raddningskaren's cars were fitted with

*Bostrom Level Ride 80, made by the Bostrom Mfg. Co., Milwaukee.

At left: State Secretary J. Michaneck of the Swedish government (center) tries out ambulance stretcher with rubber torsion suspension. With him are President O. Perlow from the Swedish Royal Board for Workers' Protection and chief consultant B. Thyrsing from the Swedish Health and Safety Center, Stockholm. Mr. Michaneck expressed his pleasure with the ride to his office.

stretcher carriers based on the spring suspension system. The system can be adjusted according to the load.

With the increase in medical specialization, according to Harry Engkvist of the Raddningskaren headquarters, patients often have to be taken long distances to specialists, or to certain mechanical aids available only in one or two hospitals in the country. In these specially-fitted ambulances, patients have been transported several hundred miles.

Doctors, hospital personnel, relatives of patients, and patients themselves have expressed satisfaction with the "passenger-car ride."

Raddningskaren developed after World War II. In 1949-50 the idea of a yearly subscription was introduced. This gave free ambulance travel to subscribers in case of accident or illness, plus salvaging and towing for car breakdowns on the road. Every subscriber received free a fully equipped first-aid box which could be replenished free whenever the member wished.

If air transport was necessary, that too could be arranged by helicopter or Seabee without extra cost to the subscriber.

Above: Attendant adjusts system to suit individual patient. Specially-fitted ambulances have provided safe, comfortable rides over long distances for patients with serious injuries—for example, patients with spine and skull injuries.

The World and Medical Care: Part I

TOPICS Tours Mediterranean Hospital, Medical Facilities

By John G. Steinle

EDITOR'S NOTE: About the first of this year, HOSPITAL TOPICS' consulting editor, John G. Steinle, left for a tour of Europe and the Mid-East. His assignment from us was very broad. We asked him to look at hospitals, and to analyze systems of medical education.

Here is the first of a series of reports from him. It covers medical care in the Mediterranean area—specifically, France, Italy, Greece, and Turkey.

Mr. Steinle talked with all types of people, patients as well as hospital administrators, plain people as well as professionals. Of course, politics, like the weather, entered into almost every interview, but, for our purpose, all political overtones have been omitted. In fact, in the interest of saving reading time and to enable you, the reader, to quickly get the gist of medical care abroad, this report is brief and obviously does not pretend to be a foreign health care Baedeker.

We hope you will find this 32-mm. travel tour interesting.

● The governments of France and Italy maintain large hospitals and clinics that are available to anyone. These hospitals are supported by payments from the social-security system, which makes a small deduction for medical care from each worker's salary and collects a major part from each employer. The social-security fund is supplemented by the government's general revenue to provide care for indigents, farmers, and other persons from whom collections are not made.

The labor unions and others complain that a large part of the employee's health deductions and employer's contributions help pay for those not covered by social security, because the government's subsidies are not sufficient to pay for care of persons who are not included in the social-security system.

The average payment by employers for all fringe benefits is approximately 40 percent of the total wages of the employee in France and 60 percent in Italy. The total income of the employee determines the amount of deductions and contributions from the employer. Employees are classified according to these payments to the social-security fund. The classifications—there are three in France and two in Italy—determine the accommodations to which the patient is entitled. This is often theoretical, however, since in many instances only large wards are available.

MANY PROPRIETARY HOSPITALS

Throughout the Mediterranean area there are many proprietary hospitals. These are generally operated by and named after a well-known specialist. In Italy the group concept is well established. The head of the hospital, which is called clinic, usually selects the staff and is responsible for the assignment of physicians to patients. There are obviously many problems and jealousies in a system of this kind. In general, the clinics are better staffed, cleaner, and better operated than the governmental institutions.

In France approximately 75 percent of the population is cared for under the government system. In Italy the estimate is 80 percent. In both France and Italy the hospitals are all old, and the wards are very large. According to American standards the personnel, including nurses, are poorly trained, and inadequate in number.

This is particularly true in Italy. In one hospital visited, there was an average of 65 patients in each of 10 large rooms. About 40 percent of the bedside care was rendered by convalescent patients, many of whom were mental cases. The beds are badly crowded, occupying an average of approximately 40 square feet each.

The wards and nursing areas in the hospitals in France are generally dirty. Those in Italy are filthy. Central sterile supply is unheard-of. Instrument sterilizing in surgery, delivery, and on the wards is generally done by the boiling-water technic.

The hospitals in France and Italy are generally not the integrated facilities that we have in the United States, but rather a collection of separate buildings each housing a specialty. For example, in a single

hospital there is often a surgical building, and a lying-in building. In larger hospitals other specialty or subspecialty buildings are added.

The chief of each service, who is known as the "professor," has a tremendous amount of autonomous authority. He not only is the chief of service but, in effect, administers "his building," sets all standards, and provides whatever co-ordination and supervision that exist.

With a few exceptions there are no voluntary hospitals in the area. A few notable exceptions are: The American Hospital of Paris, Salvator Mundi Hospital in Rome, St.-Lô Hospital in France, and Admiral Bristol Hospital in Istanbul.

The American Hospital of Paris was established by Americans who lived at least part of the time in Paris. It is staffed in part by Americans. St.-Lô Hospital was built after the war by funds from the United States Government.

Salvator Mundi Hospital,* which is a medical show-place in Europe, was built by Mother Olympia, a former Milwaukee Hospital administrator, with money that she borrowed in her native Wisconsin, after she became Mother General of "The Sisters Of The Divine Saviour." Admiral Bristol Hospital,

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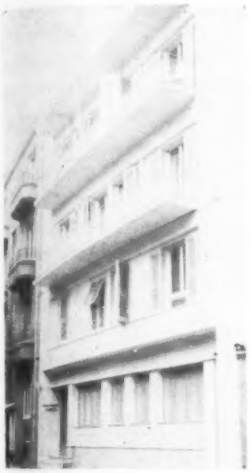
*HOSPITAL TOPICS will publish a special article about Salvator Mundi Hospital in the near future.



At left: Pamagia (Holy Virgin) Hospital, a proprietary general hospital in Athens. Note balconies for patients.

Athens is "one of the most improved cities, economically," in Europe, according to author, who found also that Greeks have an "overwhelming fear" of communism. Above: New Veterans' Hospital in Athens.

Below: Evangelismos Hospital, a public general hospital in Athens. This wing was built by money raised among Greeks living in the United States.

Below: Entrance to Alexandra Maternity Hospital, Athens, a new public facility sponsored by Queen Frederika. Greek women are proud of their queen. She has a particular interest in maternal and child health, and has sponsored several maternity hospitals.

Above: Staff living quarters at the Policlinico Ospedale, Rome. Even though the hospitals in Italy are generally very old, the author comments, the staff apartments are new and modern. Citizens of Rome, he adds, "have had years of tourist money and tourism," and have a distorted view of Americans and America.

a United States naval hospital after World War I, is now operated by American University of Istanbul.

In Greece, as in France and Italy, all employees pay into the social-security fund. According to their payments they are entitled to either second or third-class accommodations. Second-class entitles the patient to two to four-bed rooms. Third-class is ward, which generally is 16 to a room. First-class is private and must be paid for by the patient. An allowance is made if the private patient is covered under the social-security system. The patient may select either a private or public hospital.

At left: Osteomyelitis patient from Ankara, at Admiral Bristol Hospital in Istanbul.

If a patient goes to a private hospital (clinic), and a specialist (professor) is required, the patient is required to pay for this special care. In public hospitals, presumably all specialists are available.

Patients go either to outpatient facilities of public hospitals or to private physicians for general complaints. If hospitalization is indicated, the private physician refers the patient to a hospital. The hospital then assumes the responsibility for the patient. In most instances the referring physician does not see the patient again until after discharge.

If a physician has a private practice and is affiliated with a "clinic," there may be a continuity of care.

As in France and Italy, the social-security fund must be subsidized by the government for care of the poor farmers, unemployed, and others who do not pay into the social-security fund. It is generally felt that the quality of care is reduced because there is not universal coverage and that the government does not subsidize the fund to the same extent that care is rendered to non-participants in social-security.

The hospitals in the large cities of Greece are *generally* clean and fairly functional. In recent years substantial funds have been spent in hospital construction.

TURKISH INSURANCE PROGRAM

In Turkey a special health-insurance program called "Sigorta" covers all workers. There are several levels of coverage that affect the accommodations to which the "member" is entitled. Accommodations vary from first-class (which is private) to third-class (which is ward).

The great shortage of hospitals and clinics in Turkey has been further complicated by a government commitment to provide comprehensive medical care to all people in the country. There is a shortage of physicians, nurses, and medical technicians. Some of the recently established treatment and diagnostic centers are in loft buildings and old homes. There is a tremendous shortage of equipment as well as physical facilities.

MEDICAL EDUCATION

In the eyes of the European educators the American system is highly stylized in that a rigorous discipline of students and subject matter is maintained. In France and Italy didactic lectures and supplemental reading are basic teaching technics. There is much less laboratory and clinical experience with patients than in the American system. The student is encouraged to do private research and study, and to make his own arrangements to work closely with a medical teacher in a specialty

(Continued on page 67)

Below: Symbols of American-Turkish friendship—American and Turkish flags flying in front of Istanbul-Hilton Hotel. Hotel, which employs close to 900 persons, has become a "forum of the Near East," and Turks come from all over the country to view "this demonstration of their ally's wealth and know-how," Mr. Steinle says. "The average intelligent Turk," he adds, "is almost embarrassingly pro-American."

Hospital Laundry Operations

Another in a series on hospital organization, based on lectures given at meetings of the Association of Western Hospitals and allied state groups

By John H. Gorby*

II. Production Controls

One of the principal problems in the hospital laundry is the maintenance of a balanced work output. Often, the work load is heavy at the beginning of the week, because of the laundry's being shut down over the weekend, and normal or light at the end of the week. Too often, laundry management bases its daily personnel and time requirements for the week on the requirements for peak-load days.

A reasonable balancing of work loads is not impossible. It is not necessary, for example, to process on Monday all of the soiled laundry that has accumulated from the previous Friday, Saturday, and Sunday.

However, it is very important to develop an accurate and dependable production control system to balance work loads and to provide a means for keeping production costs in line. Such a system will enable laundry management to allocate the correct number of work hours for the processing of the required work load.

The basic function of production control is to provide laundry management with a means by which labor costs can be held within defined limits. To put production control into effect, standard or normal levels of operator productivity first must be established for operations such as loading wash wheels, pressing nurses' uniforms, and folding tumble-dry linen.

Current performance must then be measured against these previously determined levels. Variations from the determined levels must be investigated, and the conditions causing the variations eliminated.

PRODUCTION CONTROL SYSTEM

The following three major steps, in order of their performance, are necessary to establish a production control system:

1. Determine the work flow throughout the laundry; study and simplify it wherever possible.
2. Determine the capacity of all equipment located in the laundry.
3. Develop standard time data or hourly operator production data for each operation of the laundry process, with the exception of the few operations that do not lend themselves to time study because of the nature of the work involved.

1. Determining Work Flow

The units of work normally performed in the laundry process are presorting, washing, extracting, condition tumbling, flatwork, tumble-drying, pressing, and linen room operations. Once these units have been defined, the locations at which they are performed within the laundry should be determined. This determination can best be accomplished by observing the complete laundry process cycle and recording each unit-of-work area on a scale drawing of the department.

Each unit of work is usually dependent upon each succeeding work unit. By joining on the drawing the successive work units of the laundry operation, a graphic picture of the laundry process cycle can be obtained. This complete chart is called a flow diagram.

The flow diagram should present a complete picture of the laundry process. Areas in which the various phases of the process are performed should be shown in a simple, orderly fashion, permitting easy analysis. A flow diagram may reveal, upon careful observation, congested working areas, excessive work areas, conflicting traffic, and excessive transportation and handling in moving the laundry from one place to another. It is essential to correct these undesirable conditions and create a smooth flow line throughout the laundry process cycle, if effective use of laundry personnel and equipment is to be realized.

(Continued on next page)

*Director of Research, Project W-34, U. S. Public Health Service, San Diego, Calif.

2. Determining Equipment Capacity

The second step in the development of production controls in the laundry is to determine the capacity of all laundry equipment. This information is needed to determine whether the present equipment is adequate to handle the amount of linen required to be processed per day. For instance, what is the load capacity of each washer? How many pounds of soiled linen can each washer process in eight hours? Is the total washing capacity sufficient to handle the soiled linen load per day?

It is also necessary to compare the capacities of equipment used in one phase of the laundry cycle with the equipment used in other phases, in order to make adjustments which will eliminate delays. For example, is the extractor capacity sufficient to handle the washer production without creating delays? Is the capacity of the pressing department adequate to meet the daily pressing requirements?

Often it is desirable to increase the capacity of the equipment rather than to enlarge the laundry facility to house additional equipment of the same size. An example of this was found in a recent survey.

Additional washing capacity was needed for the laundry as a result of hospital expansion. Existing space was not adequate to house additional washers of the size already in use (350-pound capacity). The laundry was located on the third floor where expansion of space was next to impossible. However, in this instance, the hospital was able to install a 700-pound washer in the same area previously occupied by a 350-pound washer, thus meeting the required washing capacity without increasing the required floor area.

The use of heavier equipment in this laundry permitted the hospital to increase the production capacity without expanding the floor area. The change, in this instance, was completed with a minimum of interruption to the laundry operation, and without spending additional funds to increase the size of the building.

Time studies conducted at this hospital on washer loading and unloading procedures indicated that the time required to load and unload the 700-pound washer was the same per pound as that for the 350-pound machine.

3. Developing Data

The third step in the development of production controls for laundry operation is the determination of expected hourly output for each of the laundry employees. Many hospital laundries are operating without standard or normal rates of operator production. Few, if any, records of hourly, daily, or weekly operator productivity are kept.

Because of these facts, the only comparison possible in many laundries is by the historical data method—that is, checking current hourly operator production against the hourly production achieved by operators on the same jobs in the past. This method informs management whether the current production level is above or below the average for the operation. Past performance sets the standard for the operations.

However, past performances, or standards based on historical data, are seldom indicative of the true standards. Experience indicates that past performance standards are usually 25 per cent below the normal levels in most operations in the field.

Management must have accurate controls if laundry production costs are to be kept to a minimum. The only possible controls are correctly-established standards of performance. These standards may be defined as measured units, representing the normal time required by an average person, working at a normal rate of speed, to complete a specified amount of work.

INCENTIVE PLANS

Production standards may also be used as a basis for compensating the employee for the work he performs. This is commonly referred to as "incentive compensation." The three principal methods of computing such compensation are: 1. standard hour incentive plan; 2. piece-rate plan; 3. bonus plan.

Standard Hour Incentive Plan

The standard hour incentive plan is usually the most successful. Under this plan, operators may earn an incentive bonus on all operations covered by standards. The employee is paid at his hourly base rate for all delay time and all day work (work not covered by standards) which he performs.

In addition, the employee is guaranteed an hour's pay for each hour worked, regardless of performance. This guarantee may appear costly and out of line in a true incentive plan. However, management should dispose of substandard operators quickly, and in a situation in which all operators are earning a bonus, this guarantee means nothing.

The following calculation will illustrate the use of the standard hour plan, by determining the pay earned by a press operator, pressing long-sleeved nurses' uniforms on a rotary press.

Standard time for pressing long-sleeved nurse's uniform on rotary press = 2.846 minutes

Total daily production of operator = 200 uniforms

$$\frac{\text{60 minutes/hour}}{\text{2.846 minutes}} = \text{21.2 uniforms required/hour to meet standard}$$

$$\frac{\text{200 uniforms produced}}{\text{21.2 uniforms required/hour}} = \text{9.43 hours}$$

9.43 hours × $1.50/hour = $14.15 (press operator's earnings for the day)

(Continued on page 51)

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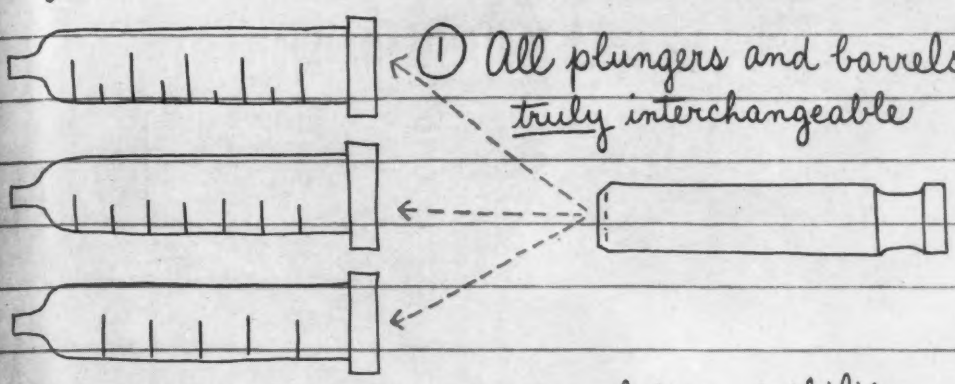

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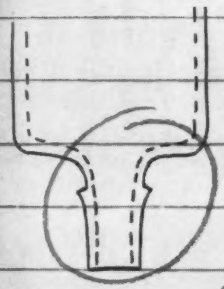

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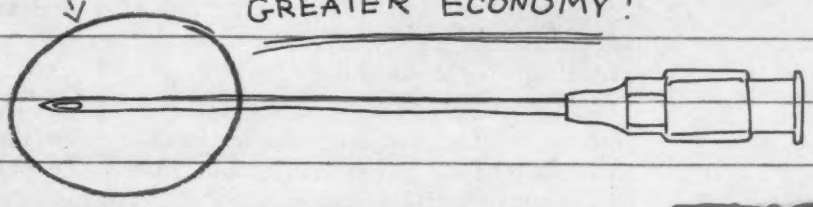

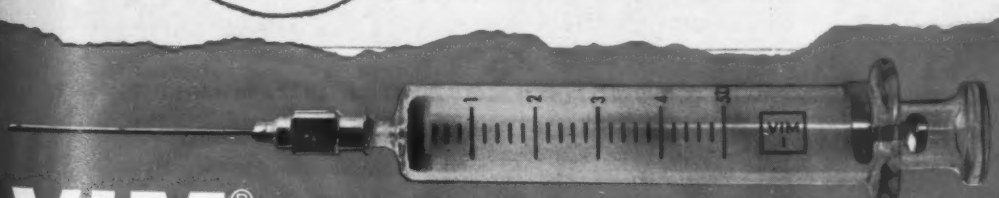

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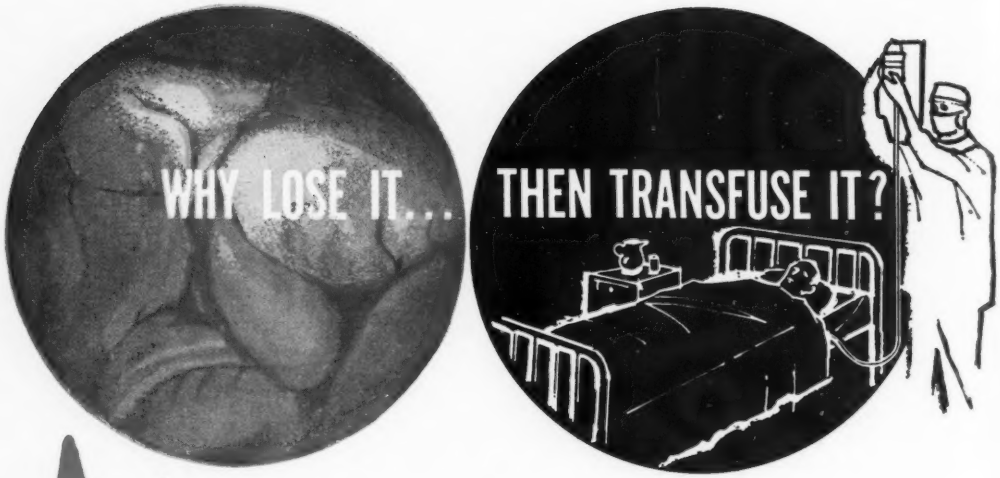

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(Continued from page 48)

Piece-Rate Plan

The piece-rate plan is one that pays the operator solely on the basis of his production. Under this plan, no payment is made for delay time, and no guarantee is given for hourly pay. Day work is usually paid for on the basis of hourly rate or average hourly earnings.

This plan may be varied if management wishes, by paying for delay time or by establishing a guarantee of hourly earnings. The straight piece rate plan usually leads to dissatisfaction on the part of the operator when long delay periods occur and no compensation is made.

The following calculation will illustrate the use of the piece-rate plan, by determining the pay earned by a press operator, pressing long-sleeved nurses' uniforms on a rotary press.

Standard time in minutes for pressing long-sleeved nurse's uniform on rotary press = 2.846 minutes

Total daily production of operator = 200 uniforms

Employee's hourly rate = $1.50/hour

60 minutes/hour = 21.2 uniforms required/hour to meet standard
2.846 minutes

$\frac{\$1.50}{21.2}$ = $0.0708 (piece rate/uniform)

200 uniforms × $0.0708 piece rate/uniform = $14.15 (press operator's earnings for the day)

Bonus Plan

In the bonus plan, an expected daily production level for the entire laundry is established, based on amount produced per operator hour. All of the employees are compensated when production goes above the level established.

The following calculation will illustrate the use of the bonus plan, by determining the pay earned by a laundry employee for one particular day.

45 pounds/operator hour = standard production level

Average production for the day = 50 pounds/operator hour

Bonus above 45 pounds/hour standard = $0.25/pound

$0.25/pound × 5 pounds = $1.25 bonus for the day

Employee's base rate = $1.50/hour

$1.50/hour × 8 hours = $12.00 base rate
bonus = 1.25
$13.25 (employee's earnings for the day)

Bonus plans may be established on the basis of categories of work in the laundry such as pressing operators, flatwork operators, washmen, and others.

All three of the incentive plans give the employee an opportunity to share in the fruits of his labor and his improved performance. However, the incentive plan is only effective if properly used and properly maintained by management. The operators and the laundry supervisor must understand and accept the plan. The supervisor of the operation must be trained in the proper technics of interpreting and using production standards, and in the correct maintenance of these standards.

Another important application of production standards in the laundry is the establishment of daily work flow schedules throughout the laundry process. It is a simple matter to determine how long a particular load of linen will remain in a work center and the number of operator hours required to process the load.

For example, the following chart shows a hypothetical work load for the pressing department and, using production standards, calculates the over-all processing time in the work center and the operator hours required to process.

Work Load		Standard Units Per Operator Hour	Normal Hours Required
Nurses' uniforms	165	21	7.9
Doctors' pants	130	29	4.5
Doctors' shirts	140	27	5.2
Doctors' coats (long)	98	20	4.9
		Total operator hours	22.5

Assuming there are three press units in the pressing department, an even spread of this load over the units will show that the load will be in the pressing department 7.5 hours and will require 22.5 operator hours to process. The same general procedure may be followed in setting the schedules for other laundry work areas.

(Continued on next page)

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SUMMARY

Laundry operation, by its very nature, lends itself to the establishment of both management and production controls. Controls are not an end to themselves, but are helpful guides for the use of the laundry supervisor and the hospital administration. Controls assist in the management of the laundry and in the recognition of problems as they arise. With controls, evaluations and decisions can be based on fact rather than opinion. Controls are represented by production records, cost records, and inventory records.

Before production standards can be established, an analysis of the work flow throughout the laundry must be made. This type of analysis uncovers crowded work areas, excess handling and transportation of linen during the laundering process, and poorly positioned equipment.

Production controls are based on two distinct factors, expected production of equipment, and expected production of employees.

The expected production of available equipment must be established to determine whether the present equipment is capable of handling the laundry load.

The expected production of employees must be estimated to determine and control the labor cost in operating the laundry.

The development of standards of production is accomplished in the following six-step process:

1. Prepare a list of all jobs performed by each employee.

2. Construct a flow process chart for each job performed.

3. Analyze the flow process chart for each job to simplify or eliminate the job.

4. Determine the actual time required to perform the job by means of a time study.

5. Determine the allowances in time for each job.

6. Determine the number of operations that can be produced per operator per hour.

After production standards have been developed, incentive systems of pay may be used. These systems, based on accurate production standards, compensate laundry employees on the basis of work produced, rather than on the basis of a straight hourly rate which is not connected with the amount of work produced.

The production standards may also be used to establish daily work flow schedules throughout the laundry.

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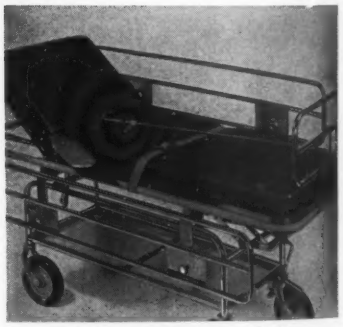

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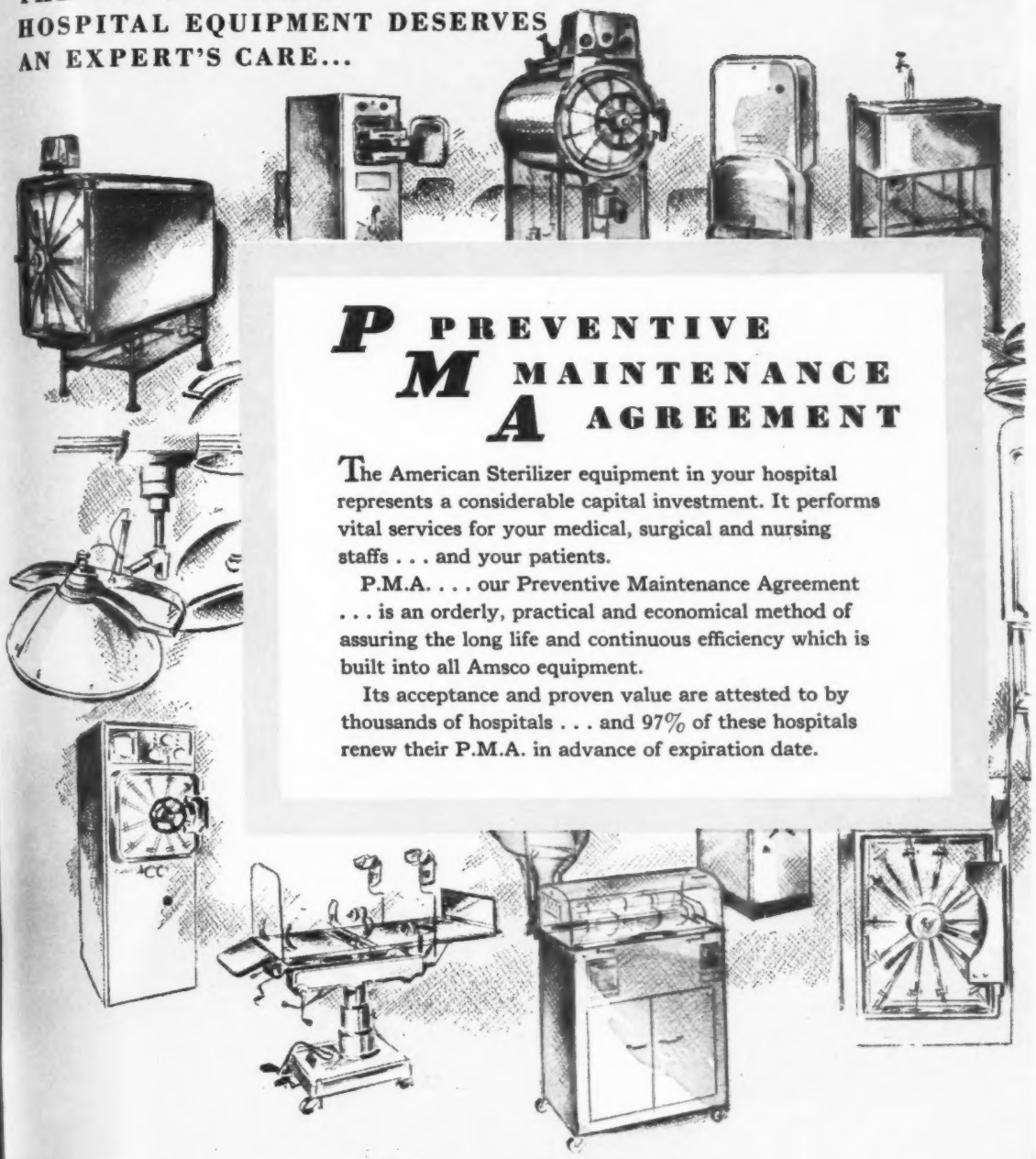

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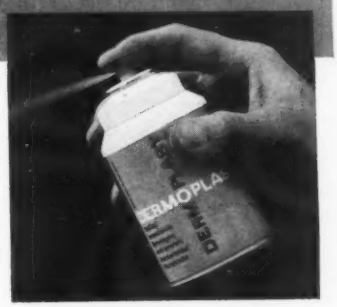

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Regional Differences in U. S. Hospitals

By Louis Block, Dr. P.H.

Fifth in a series

Number of Bassinets

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The largest number of bassinets in:

1. All hospitals are in the East North Central region.

2. Short-term general hospitals are in the East North Central region.

3. Nonprofit short-term general hospitals are in the Middle Atlantic region.

4. Proprietary short-term hospitals are in the South Atlantic region.

5. Governmental (excluding federal) short-term general hospitals are in the South Atlantic region.

Better than nine out of 10 bassinets are in short-term general hospitals in all regions. The bulk of these are in nonprofit-controlled hospitals. Proprietary hospitals account for one-fourth of the bassinets in the West South Central region.

Governmental (excluding federal) hospitals account for at least one-fourth of bassinets in the South Atlantic, East South Central, and West South Central regions.

1. The Region as a Part of the United States

Percent of	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Total
Total	6.8	19.3	13.7	19.8	6.4	10.6	9.6	4.8	9.0	100.0
Short-Term General	6.9	19.8	13.2	20.3	6.5	10.8	9.4	4.5	8.6	100.0
Nonprofit Short-Term General	8.6	23.5	11.0	22.9	4.3	11.2	5.9	4.5	8.1	100.0
Proprietary Short-Term General	1.6	11.1	17.9	3.9	13.9	7.8	30.7	2.2	10.9	100.0
Gov'tal (Excl. Federal) Short-Term General	2.9	8.9	19.5	18.2	11.2	10.8	13.4	5.5	9.6	100.0

2. The Region as an Entity in Itself

Percent of	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific
Short-Term General	96.5	97.5	91.6	98.1	95.5	96.5	92.6	89.0	90.6
Nonprofit Short-Term General	86.8	84.5	55.1	79.7	46.5	72.1	42.2	64.3	61.9
Proprietary Short-Term General	1.9	4.6	10.3	1.6	17.1	5.8	25.0	3.7	9.4
Gov'tal (Excl. Federal) Short-Term General	7.8	8.4	26.2	16.8	31.9	18.6	25.4	21.0	19.3
Other	3.5	2.5	8.4	1.9	4.5	3.5	7.4	11.0	9.4
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*Based on the 1956 Administrators' Guide Issue, *Hospitals*, Journal of the American Hospital Association.

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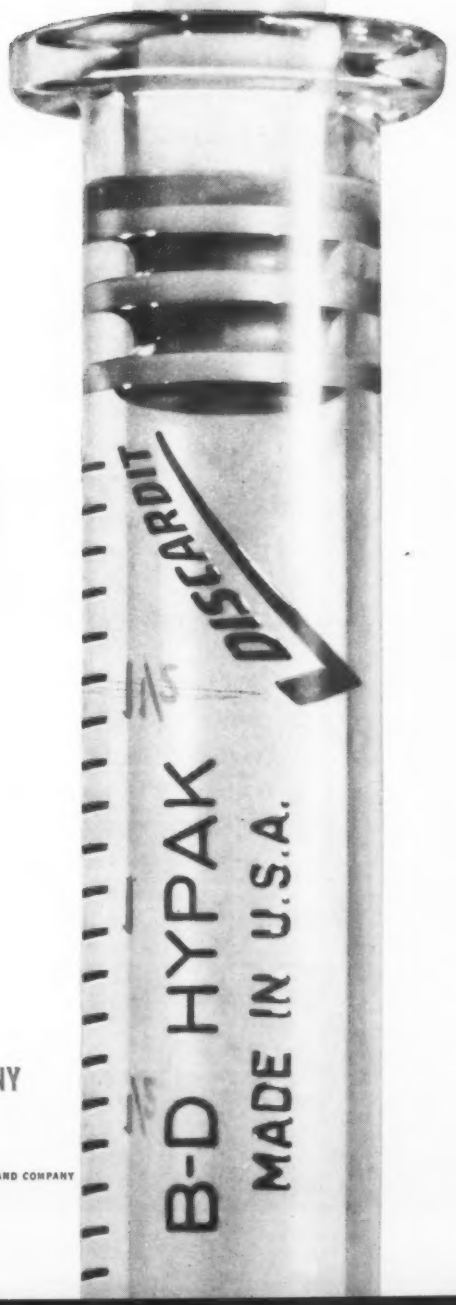

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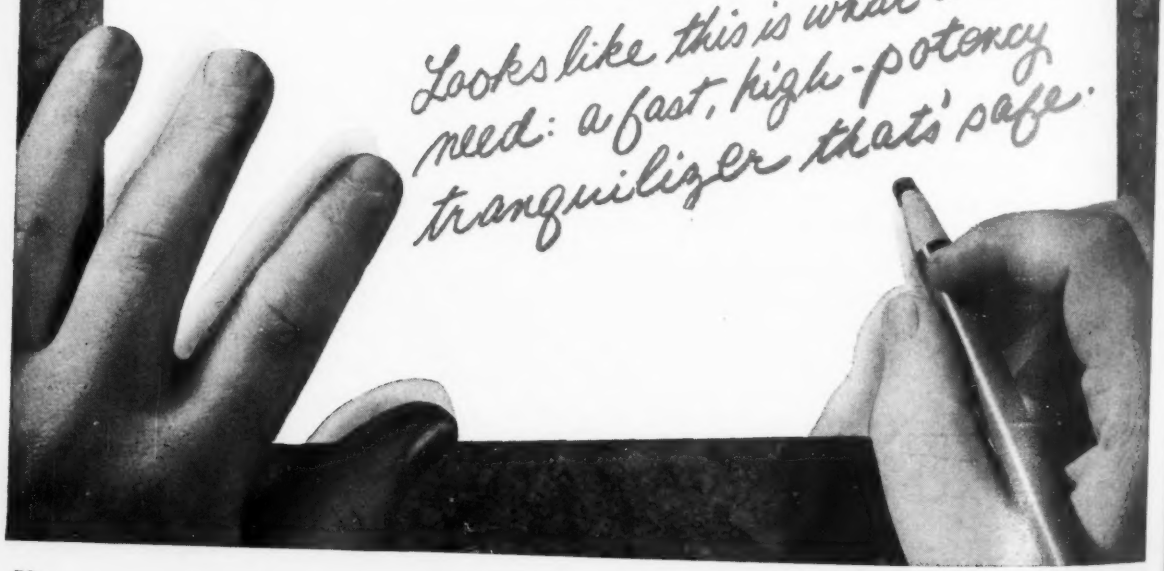

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† Reports of laboratory tests retained in files of Davol Rubber Company

Consultant's Corner

By John G. Steinle

We have received numerous requests for more information regarding methods of compensation for medical specialists, discussed in this column. Next month HOSPITAL TOPICS will publish a complete article by Mr. Steinle on this subject.—THE EDITORS.

Q. Sometimes when we have wealthy patients in the hospital, trustees have suggested that we not bill them and that one of the trustees ask them for large donations instead. What do you think of this idea?

A. There should be no relationship between the patient's responsibility to pay for services and his responsibility as a member of the community to support the hospital. You will find that failure to charge will not normally affect the patient's willingness to give. It sets a very bad precedent and is based on an indefensible principle—not charging the wealthy and charging those who are not wealthy.

Instead of improving relations with the "wealthy patient," this act may do just the reverse. He may rightly ask these questions: "What kind of business operation do they have when I was not even charged for my services?" Or, "Can any trustee influence the charges to the extent that I was not even charged?"

Q. In the last few months we have noted a substantial increase in occupancy. What is the significance of this?

A. There has been a general increase in occupancy corresponding with the rate of unemployment and the extent of Blue Cross and commercial group-insurance coverage in the community. This increase is consistent with the experience of hospitals located in communities that have industries that periodically cease production. For example, in cities that have predominantly automotive industries, the hospitals always experience an increased occupancy during periods of retooling.

At present we seem to be undergoing such a period on a national scale. People who are laid off come to hospitals for elective work before their Blue Cross or insurance lapses. Predominantly agricultural communities, those that do not have a high rate of unemployment, or those with a small proportion of Blue Cross and commercial insurance, are not experiencing this rise in occupancy.

The present high occupancy should not in itself panic hospitals into development of expansion programs. They should determine what proportion of present admissions are elective in comparison with admissions several years ago. In determining what constitutes elective admissions, they should not be influenced by number of admissions classified by the admitting physicians as "emergency." Careful examination of each admission frequently demonstrates the truth of the oft-heard saying: "Emergencies exist only when occupancy is high and a bed is difficult to obtain."

In a recent study we found that a large number of so-called emergency admissions had long histories of the same conditions for which the patients were admitted. This observation brings up another interesting finding about the present high occupancy—the fact that many hospitals are not experiencing a corresponding increase in x-ray and laboratory work. This is understandable if the increased occupancy is due to elective cases that have largely been "worked up" prior to admission.

Hospitals are strongly advised to use the high income during this period of high occupancy to build up their reserve for bad debts. If the period of unemployment continues, Blue Cross and commercial insurance will run out, and patients will not be able to pay their hospital bills.

Q. We are trying to establish monthly increments for our budget as a guide to the various departments. We ran into a major difficulty in developing monthly allocation for oil for heating. What is the general experience on monthly heating costs?

A. Figures will of course vary by sections of the country. Since this inquiry originated in the Northeastern section, we present the following table as a general guide for percentage distribution of annual heating costs by month in that area:

Oil, Gas, or Coal Costs By Month
(Northeastern United States)

January	16 percent
February	15 percent
March	14 percent
April	7 percent
May	4 percent
June	3 percent
July	3 percent
August	3 percent
September	4 percent
October	6 percent
November	10 percent
December	15 percent

Estimates can generally be obtained from a local utility, coal, or oil supplier.

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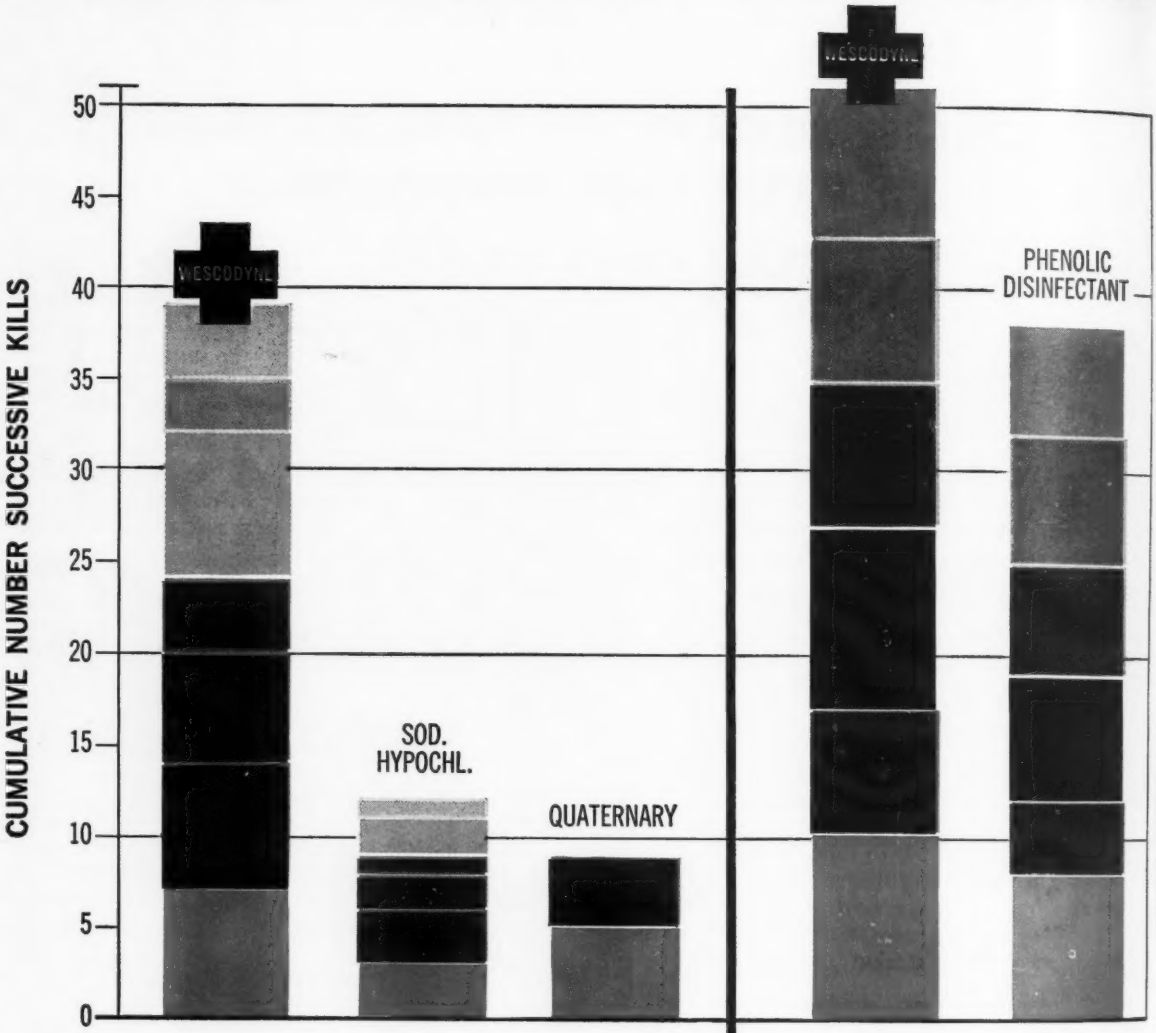

Capacity Test for Germicidal Action. (A. Cantor and H. Shelanski as described in Soap and Sanitary Chemicals, February 1951.) **Explanation:** This method essentially consists of adding to the use-dilution of the disinfectant or sanitizer, successive doses of a 50/50 mixture of milk plus broth culture of test organisms. These doses are added at ten minute intervals. Thirty seconds after each addition, a transfer is made into broth containing a suitable inactivator. This method makes it possible to determine the capacity of a germicide to kill before the micro-organisms and organic contamination have exhausted its germicidal action. **Organisms:** Salmonella typhosa, ATCC #6539; Micrococcus pyogenes. var. aureus, ATCC #6538; Salmonella pullorum, ATCC #9093; Pseudomonas aeruginosa, ATCC #8689; Trichophyton interdigitale Emmons 640, ATCC #9533; Penicillium luteum, ATCC #9644; Saccharomyces cerevisiae, ATCC #10274. **Dilutions:** WESCODYNE: 1:320 (50 ppm available iodine); Sodium hypochlorite: (100 ppm available chlorine); Quaternary: (50%) 1:5,000 (200 ppm active ingredient). **Temperature:** 15°C. **Media:** Fluid thioglycolate medium, USP XIII was used for testing WESCODYNE and sodium hypochlorite "Letheen" broth was used for testing alkyl dimethyl benzyl ammonium chloride.* All tests were re-subcultured in the same medium. **Results:** See above chart. **Conclusion:** The cumulative number of successful kills shows WESCODYNE to be over three times more effective than the nearest material tested.

*Neopeptone dextrose broth was used for testing the alkyl dimethyl benzyl ammonium chloride against the three fungi.

Wescodyne vs. Leading Phenolic Disinfectant. (A. Cantor and H. Shelanski Capacity Test as described in Soap and Sanitary Chemicals, February 1951.) The method used in this test is the same as that used in the Capacity Test for Germicidal Action described at left. **Dilutions:** WESCODYNE: 1:213 (75 ppm available iodine); phenolic disinfectant: 1:100 **Temperature:** 15°C. **Media:** Fluid thioglycolate medium, U.S.P. XIII was used for testing WESCODYNE and FDA nutrient broth was used for testing the phenolic disinfectant. All tests were re-subcultured in the same medium to eliminate bacteriostasis. **Results:** see above chart. **Conclusion:** This test shows that the bactericidal effectiveness (in the presence of organic contamination) of WESCODYNE at a dilution of 1:213 (75 ppm available iodine) is greater than that of a leading phenolic disinfectant at a dilution of 1:100.

PATHOGEN COLOR KEY:

- Salmonella typhosa (typhoid organism)
- M. pyogenes v. aureus (staphylococcus organism)
- Salmonella pullorum (poultry disease organism)
- Pseudomonas aeruginosa (wound contaminent organism)
- Trichophyton interdigitale (athlete's foot type of fungus organism)
- Penicillium luteum (mold organism)
- Saccharomyces cerevisiae (yeast organism)
- Strep. pyogenes hemolyticus (streptococcus organism)
- Escherichia coli (enteric organism)
- Shigella sonnei (dysentery organism)
- Salmonella schottmuelleri (food contaminent causing dysentery)

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WESCODYNE's advantages are extraordinary. Its greater germicidal capacity is shown at left. Two other features are equally outstanding:

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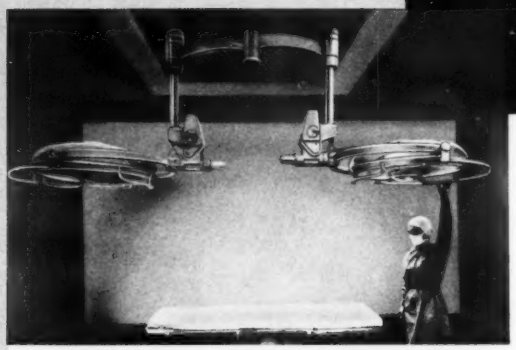

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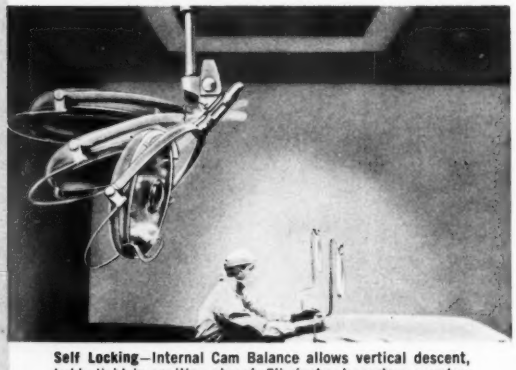

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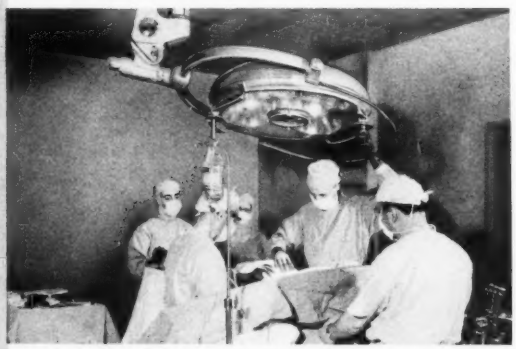

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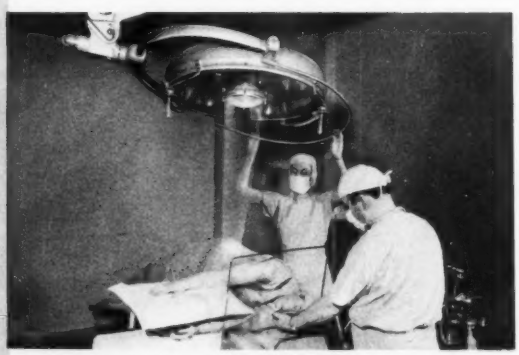

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PIONEERS IN SURGICAL EQUIPMENT SINCE 1883

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Review of Hospital Law Suits

- Application of Guest Statute
- Liability of Insurance Company

By Leo Parker
Attorney at Law

• Many states have enacted laws which provide that a person injured in an automobile in which he is being transported over a highway as a guest cannot recover damages from the vehicle owner.

A few weeks ago a higher court rendered a decision, important to all hospital officials, to the effect that a person who rides in an ambulance with an ill or injured person is not a guest of the owner of the ambulance.

For instance, in Oscar v. Crane-Longley Funeral Chapel, 283 S. W. (2nd) 217, the testimony showed that Miss Bernice Coble was examined by a doctor, who determined that she should be taken immediately to a hospital in an ambulance. An ambulance was sent to pick up the patient. Miss Coble asked a friend, named Oscar, to ride in the ambulance with her. Oscar told the driver and the attendant that he was going to ride in the ambulance with Miss Coble, and they said that would be all right. Miss Coble was placed on an ambulance cot and put into the vehicle. Oscar got in and sat on a small seat near the patient. En route to the hospital the ambulance struck another vehicle. Oscar was seriously injured and sued the ambulance owner for damages.

During the trial the counsel argued that the ambulance owner could not be liable because of a state law which provides that no person transported as a guest, over the public highways by the owner of a motor vehicle, without payment for such transportation, shall sue for injuries and recover damages from the owner of the vehicle.

However, the higher court held that since Miss Coble hired the ambulance, and paid the owner for its use, Oscar was a guest of Miss Coble and not a guest of the ambulance owner. Hence, the ambulance owner is liable in damages to Oscar if the testimony shows that the collision of the ambulance with the other vehicle resulted from negligence of the driver of the ambulance. This court said:

"We hold that the state law has no application to the case at bar. Here an ambulance was hired by Miss Coble and the plaintiff (Oscar) was invited by her. He was the guest of Miss Coble who was paying the owner of the vehicle for the transportation. Under the facts of this case, a sick person who hires an ambulance for transportation certainly has a right to have someone ride with her in the ambulance."

REASONABLE DETENTION

A few weeks ago a higher court rendered an important decision to the effect that if the driver of an ambulance is violating a valid law, he may be arrested, and ill occupants of the ambulance may be detained, without any liability by the arresting police officers.

For illustration, in Wrobleski v. Coleman, 283 S. W. 822, it was shown that a man named Wrobleski was taking his wife, by ambulance, for medical treatment to a hospital. A constable, Coleman, was on the highway at that time and observed the manner in which the driver was driving the ambulance. After "running him four or five miles" on the highway, Coleman arrested him on three charges: "having a siren on unlawfully," "having a red light on unlawfully," and "passing another automobile in a no-passing zone." Wrobleski and his ill wife were detained four hours while the driver made arrangements to pay the assessed fine.

Wrobleski and his wife sued Coleman for heavy damages for alleged unlawful and unreasonable detention of the ill wife.

Since the ambulance driver was arrested for violating valid laws, the higher court refused to award Wrobleski any damage, and said:

"The evidence as to the seriousness or lack of seriousness of Mrs. Wrobleski's physical condition was conflicting. We think the finding of the jury that she was not unreasonably or unlawfully detained or delayed is amply supported by the evidence in the case."

WHEN CONTRACTOR IS SOLELY LIABLE

An official of a hospital asked: "If a hospital corporation employs a contractor, on a contract basis, to do repair work on the hospital, is the contractor liable for injuries sustained by the contractor's employees?"

Recently a higher court answered this question in the negative.

As an illustration, in Jensen v. St. Joseph's Mercy Hospital, 83 N. W. (2nd) 403, the testimony showed that an official of St. Joseph's Mercy Hospital signed a contract with a contractor named Donald, to repair the flat gravel and tar roof of an old part of a hospital building. There was a frame stairway extending from the old roof to the top of a brick firewall. Jensen,

(Continued on next page)

an employee of the contractor, was seriously injured when the stairway broke while he was carrying a bucket of tar to the older roof where the repairs were being made.

In holding the St. Joseph's Mercy Hospital not liable in damages to Jensen, the higher court said:

"The contractor made an agreement with the defendant (St. Joseph's Mercy Hospital) to furnish labor, equipment and material to repair the gravel and tar flat roof of the old part of defendant's hospital, formerly used as a nurses' quarters. The record establishes that the roof of the old part, where the work was to be performed, was reasonably free from any conditions hazardous to its performance, and that no negligence on the part of defendant (St. Joseph's Mercy Hospital) or anyone connected with it contributed to or in any way proximately caused the plaintiff (Jensen) the injuries alleged in his petition."

INSURANCE COMPANY LIABLE

Can an insurance company avoid payment on its policy to a hospital if the evidence shows that the insured patient did not correctly answer questions pertaining to his health in the insurance application?

Generally speaking, any fraud on the part of an insured person voids his insurance policy. On the other hand, it is the settled rule that in order to void a policy on false statements of the insured the testimony must show that the false statements were made willfully and with design to deceive or defraud.

In Jefferson Life Insurance Co. v. Kuehler, 298 S. W. (2d) 619, the testimony showed that when Kuehler filed an application for a hospital and accident policy, the insurance company's agent wrote all the answers to the questions and did not ask Kuehler whether he had had any medical or surgical treatment or advice within the last three years. The insurance company contended that it was not liable upon the policy because of the misrepresentations made by Kuehler in the application, in which he stated that he was in good health, both mentally and physically, and that he had not had medical or surgical advice or treatment for three years prior to signing the application.

The higher court held the insurance company liable, and said:

"It is also well settled that to void a policy of insurance because of misrepresentations, the burden is on the insurer (insurance company) to prove, not only that the answers made by the insured were false or untrue, but that the insured knew, or should have known, that they were untrue, and that he made them willfully and with the intention of inducing the insurer to issue him a policy."

HOSPITAL AND AGENT LIABLE

The higher courts generally have held that if a hospital compromises a law suit and pays an injured patient an agreed amount of money, the hospital is immune from future suits. However, recently a higher court reversed this usual law.

In Madison Hospital Corp. v. Bush, 298 S. W. (2d) 761, the testimony showed that a man named Bush went to a hospital to have an operation performed. In the operation, performed by Dr. Schuler, a surgical sponge was left in Bush's intestines. Later, after dismissal from the hospital, Bush became desperately sick and was returned to the hospital. Dr. Schuler again did an abdominal operation, which disclosed a gangrenous intestine caused by the sponge left in it. The surgeon had to remove about three feet of the intestine. After cutting the intestine open, he found the sponge.

With commendable frankness, Dr. Schuler told the family about the mistake which had been made, and made no charge for the second operation. It might be added also that the original operation was an excellent and skillful piece of professional work, except for the fact that the sponge was left in the body.

The operation took place in the surgical suite of the hospital. All facilities and all personnel were furnished by the hospital. The nurse and anesthetist were employees of the hospital and were paid by it for their services in connection with the operation. The testimony showed that the sponge was left in Bush's intestine because of the nurse's miscount of the sponges.

Dr. Schuler paid Bush $10,000 as a "peace settlement." Later Bush sued the hospital for heavy damages. The higher court held the hospital liable to Bush for $15,000 damages, saying:

"The selection of proper sponges was the duty of the hospital. Counting the sponges so as to see that no sponge was left in the body of the patient required no special professional skill or decision of the surgeon. Indeed, Dr. Schuler relied upon the sponge count of the nurse. Duties which a hospital owes to a patient cannot be evaded by proof that the hospital nurse obeyed the instructions of the physician employed."

This court also held that Dr. Schuler was the agent for the hospital, saying:

"It is the custom and practice that the operating surgeon is in complete charge of the surgery room and all personnel connected with the operation. In matters of professional skill or decision, it is the duty of the personnel (nurses, the anesthetists, or any others who may assist) to obey explicitly the orders of the surgeon. The lower court held that the evidence warranted findings that both the nurse and the surgeon were agents or employees of the hospital and that accordingly the hospital could not escape liability for their negligent acts."

(Continued from page 32)

Heparin-Antibiotic Union Successful In Treating Weeping Infected Eczema

Heparin Apparently Reduces Toxicity; High Level of Drug Possible

Twelve cases of resistant weeping infected eczema of the ear canal have been treated successfully with a preparation of one percent heparin combined with an appropriate antibiotic — three percent neomycin, polymyxin, or streptomycin, depending on the sensitivities of the organism causing the eczema.

The preparation was applied to the lesions. Healing occurred in three days to three weeks. In two cases, as soon as the heparin was stopped, there was a return of the difficulty.

All patients had been treated for two years previously without success. Pretreatment cultures showed presence of hemolytic *Staphylococcus aureus* and *Proteus*. In one case there was also otomycosis.

The heparin apparently cuts down drug toxicity and allows a high level of the drug in the blood for long enough periods to control the disease.—*David A. Dolowitz, M.D.*, associate clinical professor of surgery, University of Utah School of Medicine, Salt Lake City.

Bladder Reconstructed from Intestine In Five Patients, Surgeon Reports

Two Have Uneventful Recoveries

Replacement of a cancerous urinary bladder by one reconstructed from an isolated segment of the intestine has been done in five patients.

Two had uneventful recoveries and are making satisfactory use of the new bladders. Two others died from cancer which had spread to other parts of the body. However, before their deaths the new bladders had been functioning. The fifth patient died of peritonitis three weeks after the operation.—*Seiichi Makuuchi, M.D.*, chief, first surgical department, Japanese Red Cross Central Hospital, Tokyo.

(Continued from page 46)

of his choice. In most French and Italian medical schools there are a number of elective subjects.

The pre-medical school programs in the Mediterranean area require fewer basic science subjects than programs in the United States. However, a broader social-science program is promoted in these countries.

The Deputy Minister of Health in France stated that he thought, on the average, the American medical-education system produces a much better average physician than the European systems but that the latter produces more outstanding scholars. He further declared that he thought the European-trained medical man had a broader social concept. As an example, he pointed out the large number of physicians who have assumed a major role in government and other non-medical areas.

When questioned about the limited amount of clinical training provided medical students in France, he said that the prime objective is to train men for the government hospitals. The first year after graduation the physician in the government hospital has responsibility comparable to that of the senior medical student in an American teaching hospital. His second year after graduation is equivalent to our internship.

Unfortunately, however, only about 60 percent of the medical-school graduates go into the government hospital system. The remaining 40 percent go to work in the private clinics or into private practice, usually in small towns. The individual patterns, as in the United States, vary substantially because of requirements for compulsory military service, which are sometimes met before entering medical school, sometimes after graduation from medical school.

The current cabinets of France and of Italy have two physicians each. Two of the last three governors of Istanbul have been physicians, one a psychiatrist and one an opthalmologist.

In Italy and Turkey the government completely subsidizes medical education. In Greece a good student can get a free medical education in the army medical school. While the standards of medical education vary substantially in France and Italy, the standards in the three schools of Greece (at Salonika and Athens Universities and at the Army Medical School) and at the three schools in Turkey (at Istanbul University, Ege Medical School at Izmir, and Ankara University) are supervised by their respective governments.

In Turkey, all specialists are licensed after examinations by the government, which strictly enforces specialization. For example, only a licensed surgical specialist is authorized to perform an operation, and only a licensed obstetrician is permitted to make deliveries.

(The following abstract is from a paper presented at the recent meeting of the American Academy of Orthopaedic Surgeons.)

Dislocated Knees in Infants May Be Due to Hereditary Factors

Often Accompanied by Other Congenital Abnormalities

Dislocated knees in newborn infants, thought by many to be due to the position of the fetus within the uterus, may also be caused by hereditary factors.

Such knee dislocations are frequently accompanied by other congenital abnormalities in the patient. In a series of nine cases observed at Stanford University Hospital in the last 25 years, there were four patients with dislocation of the hip as well.

Many cases seen shortly after birth can be treated simply by manipulation of the knee followed by casting. Sometimes traction is also required.—*John J. Niebauer, M.D.*, associate clinical professor of surgery (bone and joint), and *Donald E. King, M.D.*, professor of surgery (bone and joint), Stanford University School of Medicine, San Francisco.

BUYER'S GUIDE

For further information on any of the products, please check the Buyer's Guide number on the reply card opposite page 128.

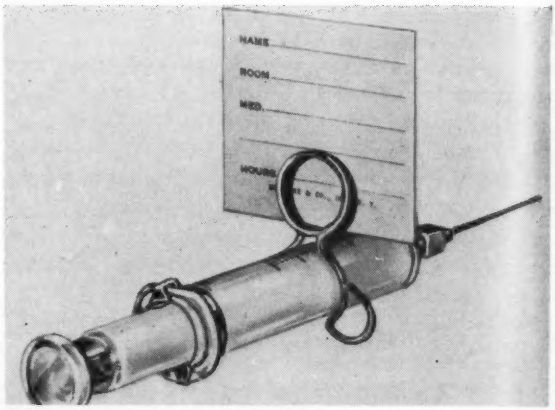
Evelyn Schwanke
Buyer's Guide Editor

900. Anesthetist's chair

Ajustrite Model A 1725 chair is designed for use of the anesthetist in the operating room, and is completely conductive to meet operating room safety requirements. Built to relieve strain and give posture support, instant seat adjustment up or down is made without the use of tools of any kind. Seat may be lifted to desired height and remains securely in place. Base of chair and footrung are of 16-gauge steel tubing finished in satin chrome plate. Chair has foam rubber cushion, UL approved casters or glides. Ajusto Equipment Co.

901. SPectro-Calcium kit

With Dade SPectro-Calcium kit accurate calcium determinations can be made in less than an hour. Process can be completed in four simple steps using three balanced reagents supplied in the kit. Procedure is based on Ferro-Ham technique. Method is easily reproducible; color remains stable for days. Final spectrophotometer reading eliminates errors from end point estimation in titration methods. Scientific Products, division of American Hospital Supply Corp.

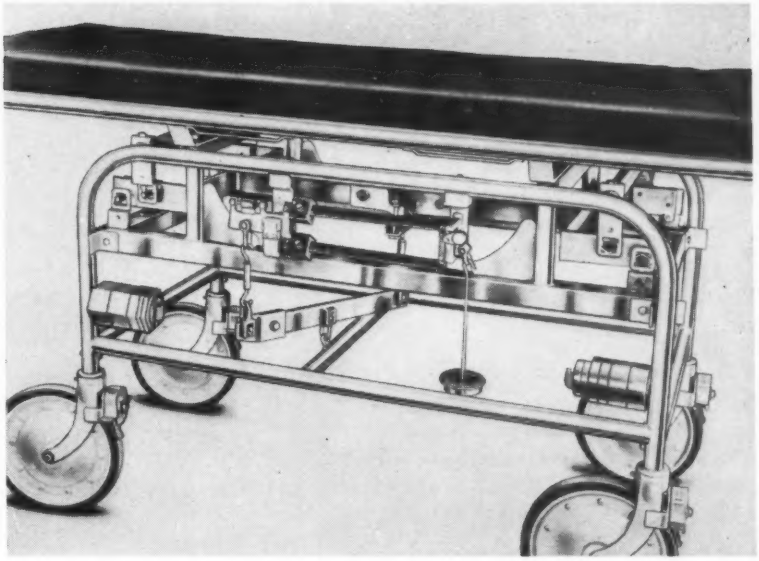


902. Syringe card clips

Clips attach medicine card securely to syringe and assure positive medication identification. Card inserts in coil at top of clip, which presses down over barrel of syringe until legs lock into position. Syringe is held level in elevated, sterile position; needle and plunger ends remain free from contamination. Meinecke & Co.

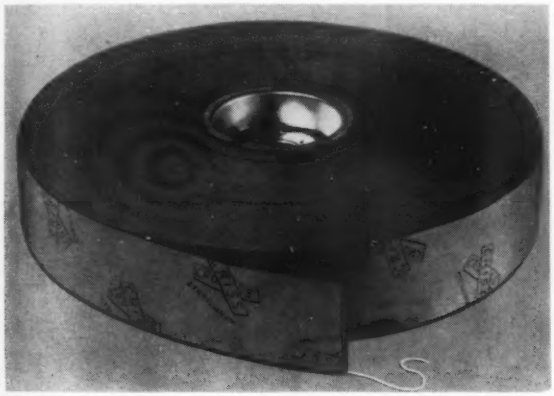
903. Scale-stretcher

Scale stretcher for hydration measurement is used for illnesses where body weights provide valuable information as to patient's state of hydration. Scale is mounted to under chassis of frame and is calibrated to assure highest possible accuracy. Method of weighing keeps handling or movement of patient to a minimum and simplifies work of orderlies or nurses. Patient can be weighed accurately without carefully positioning him in exact center of litter. Invaluable for hospitals using artificial kidney machines. Four dual control casters securely lock stretcher against side movement while patient is being weighed. Jarvis & Jarvis, Inc.



904. Easy open wrapper

New string pull, criss-cross Sterilwrap tubing is available in widths of 1½", 3", 4", 6" and 8". Embedded string makes possible opening wrapper longitudinally with a single motion. Articles wrapped for sterilization are easily released. Busse Hospital Products.



905. Air spray

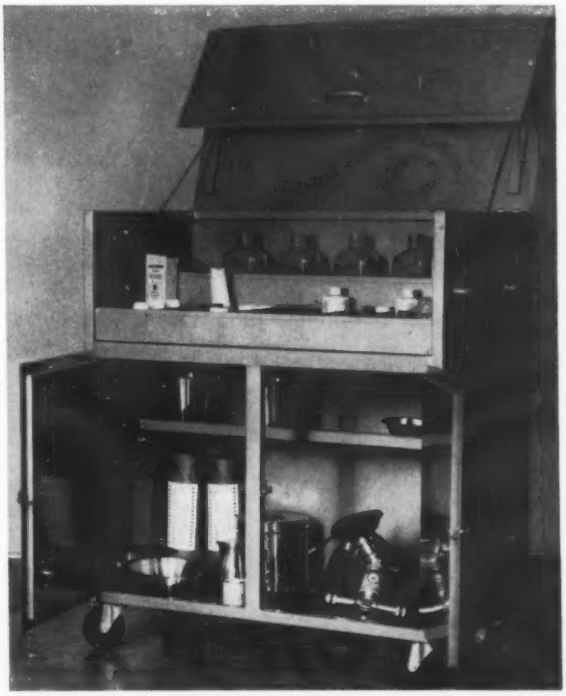
Ozium, glycolized air spray, is now available in personal size container. Nothing to fill; pressure on chrome button immediately releases measured sprays. Each dispenser guaranteed to give 500 sprays which not only rid air of objectionable odors but sanitize air. Air-borne bacteria are also reduced. Woodlets, Inc.

906. Agar plate

Silver chromate agar plate can be used in rapid screening test for cystic fibrosis of the pancreas. Test procedure is based upon well-documented observation that sweat electrolytes are markedly elevated in patients with cystic fibrosis. Finger or hand imprint is made directly on surface of agar plate. Results may be read immediately. Hyland Laboratories.

907. Poison control unit

New Poison Antidote-mobile unit offers poison-control center for hospitals to help reduce constantly increasing accidental poison cases throughout country. Designed for emergency room, but is portable for ward emergencies. Of heavy steel with compartments, shelves and slots to house instructions, references, and all known antidotes and equipment to control poison cases. Time-saving, all antidotes are in readiness in one convenient location. Optional locking arrangement. Unit is 36" wide, 18" deep, 41" high, with rubber casters. Continental Hospital Industries.



909. Ultrasonic cleaner

Self contained ultrasonic installation for cleaning, immersion or spray rinsing of hospital equipment is known as Model H-50 Sonogen. Will process surgical instruments from several operations in a few minutes. Ultrasonically agitated liquid quickly loosens and removes contaminants. Branson Ultrasonic Corp.

910. Color post cards

Natural color post cards extend the hospital's public relations program in a dignified and economical way. Available in standard post card size, double cards or jumbo cards. May be used in lobby, in visiting rooms, on patients' trays, for fund-raising activities, auxiliary meetings. Exterior or interior views may be used. Curt Teich & Co., Inc.

911. Non-adhering dressing

Adaptic non-adhering dressing now available in 3″ x 3″ size, for use on small wounds with a tendency to stick to absorbent dressings. Non-adhering screen of dressing allows drainage to pass into secondary absorbent pad. Johnson & Johnson.

908. Electrophoresis apparatus

"Electrograf," 1958 model electrophoresis apparatus, is now supplied with new migration chamber of 3/16″ thick, heavy wall transparent plastic. Sliding-type cover has built-in interlocks, eliminating chances of electrical shock; opening cover slightly disconnects power leads. Other features: stabilized power supply, variable voltage and current control. Labline, Inc.

912. Calculator

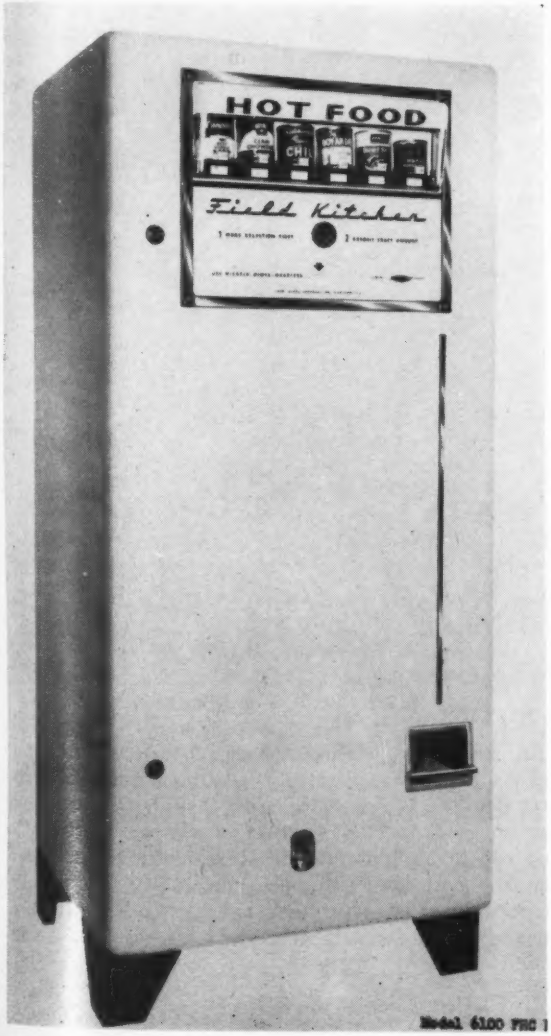
Ten-key calculator adds, subtracts, multiplies and divides, yet weighs only six pounds. BDC Contex is depressed with the palm of the hand, without removing the fingers from the keyboard. Has capacity of ten digits entered, eleven total. Bohn Duplicator Corp.

913. Polyethylene supplies

Nalgene low pressure process polyethylene ware comes in variety of items, all of which are resistant to hardening, cracking, discoloration, are low in moisture transmission, light weight, easy to clean, practically unbreakable. Line includes beakers, bottles, carboys, test tubes, pipets, flasks, funnels, tubing. A. Daigger & Co..

914. Field kitchen

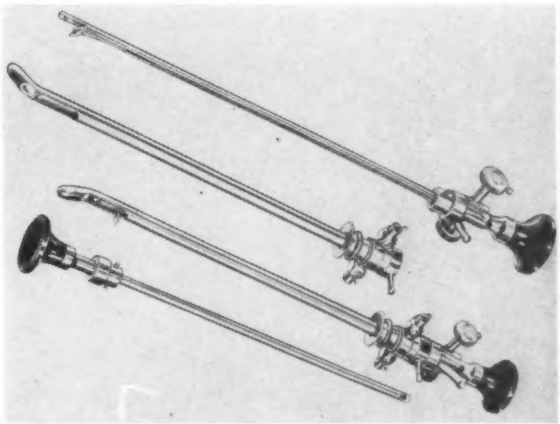
Designed to provide quick, easy service, Field Kitchen, new hot canned food vendor, offers six selections of ready-to-eat food. Jam-proof unit has vending capacity of 228 cans, 200 cans in pre-heated storage, and 200 in regular storage. Selections offered are displayed in illuminated section in front panel. Thermostat controls circulating heat; agitated delivery blends food. Fred Hebel Corp.



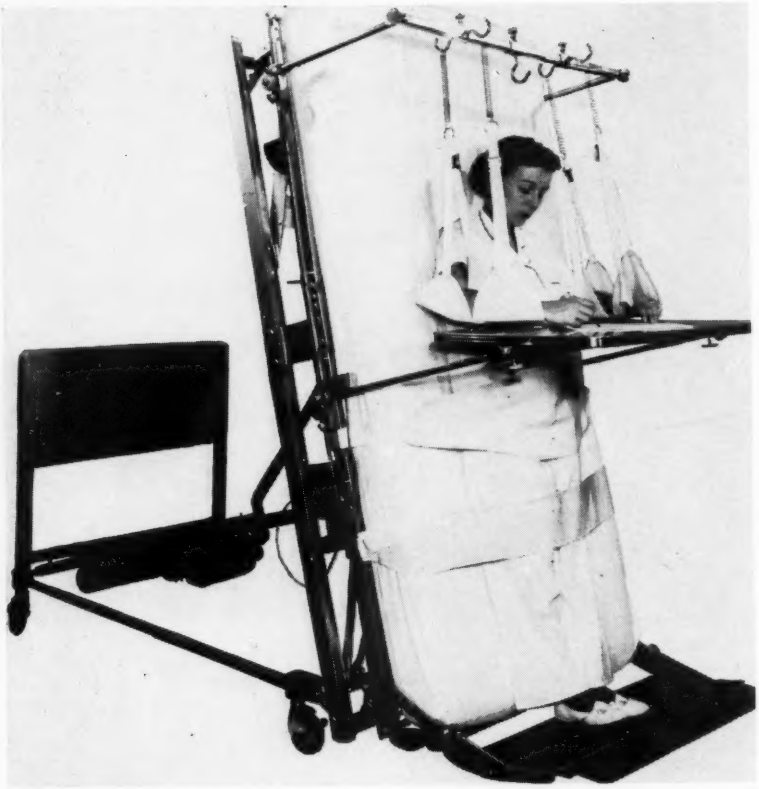
915. Ball bearing feeder

Warm Springs type of feeder has clamping bracket fitting all types of metal wheel chairs. Works on principal of balance and gravity elimination with friction free ball bearings. Constructed of steel, except for aluminum trough. With minimum of effort patient can feed himself, participate in a variety of other beneficial activities, to gain self reliance. Rehabilitation Products, division of American Hospital Supply Corp.

916. Cystoscopes



New series of cystoscopes has been introduced, in 16, 21, 24 fr. sizes. Line has non-rotating stop-cocks, further improved optical system and offers complete interchangeability with sheaths and other equipment of other manufacturers. National Electronic Instrument Division, Engelhard Industries, Inc.



917. Disposable needle

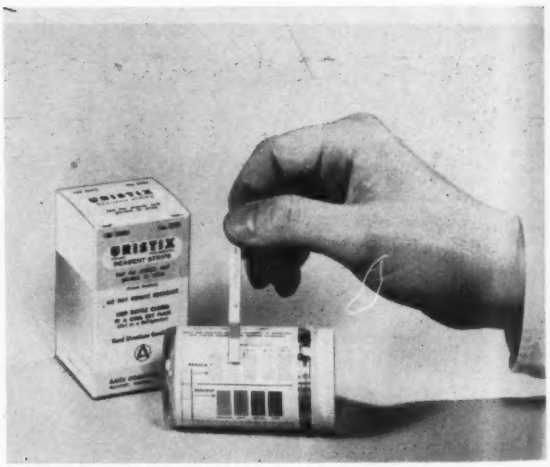
Yale sterile, disposable hypodermic needle has been added to line of Discardit products. True disposability of needle is assured by plastic hub, which will not withstand conventional method of re-sterilization. Maximum patient comfort is assured by outstanding sharpness of the newly-designed point. Needles fit all Luer-Lok and Luer slip syringes. Hubs and packaging labels are color-coded according to gauge. Becton, Dickinson and Co.

918. Ortho-therapy bed

Franklin Ortho-Therapy bed is used in treatment of cardiac complications and where post-surgery and physical therapy treatment is required. Enables patients too ill to be moved to change position. Prevents complications caused by prolonged periods of lying in one position, also permits easier transfer to wheel chair. All standard hospital bed positions are easily attained, as well as positions of tilt table. Bed is powered by silent electric motors, operated by remote control switch. Complete line of accessories increases uses of bed. Franklin Hospital Equipment Corp.

919. Cleanse pac

pHoam cleanse pac is a sponge-like polyurethane applicator designed to hold free-foaming cakes which contain a non-alkaline, soapless cleanser. Specially formulated, the cakes are penetrating, non-irritating, have emollient base. Retain their solid form even in the presence of continuous moisture. Medicated with bithionol, foam has deep cleansing and therapeutic action. Doak Pharmacal Co., Inc.



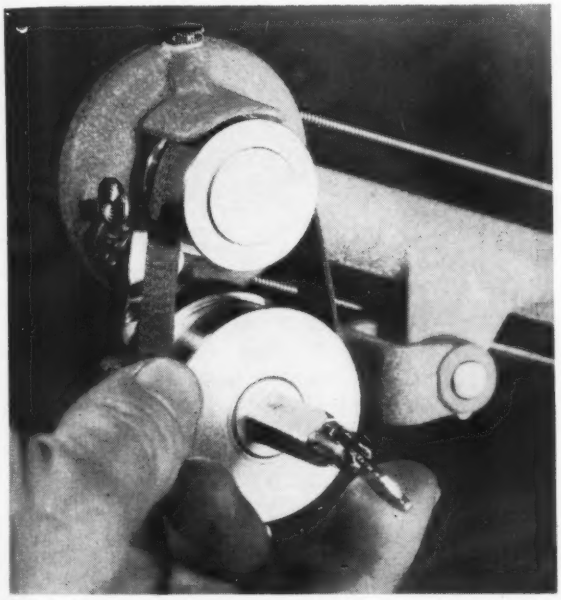
920. Urine tests

"Dip and Read" combination test for proteinuria and glycosuria has been introduced under name of Uristix Reagent Strips. Firm paper strip is impregnated on one end with reagents that change color with positive tests. Test provides in a matter of seconds the two most commonly performed and diagnostically important urine tests. Operator merely dips strip in specimen and compares result to color guide. Ames Co., Inc.

921. Garbage disposer

Simplified, yet versatile, line of commercial garbage disposers and accessory components now available. There are six basic model disposers, a new silver guard and scrapping system, two bowls, three bowl covers, two swirl sprays, four overhead spray rinses, and a reduced number of switches, valves and other fittings. Parts can be assembled in 108 combinations, to meet specialized requirements of any food service operation. Features of new line include quiet operation, longer life, easier installation and maintenance, and elimination of external wiring. Waste King Corp.

922. Movie projector

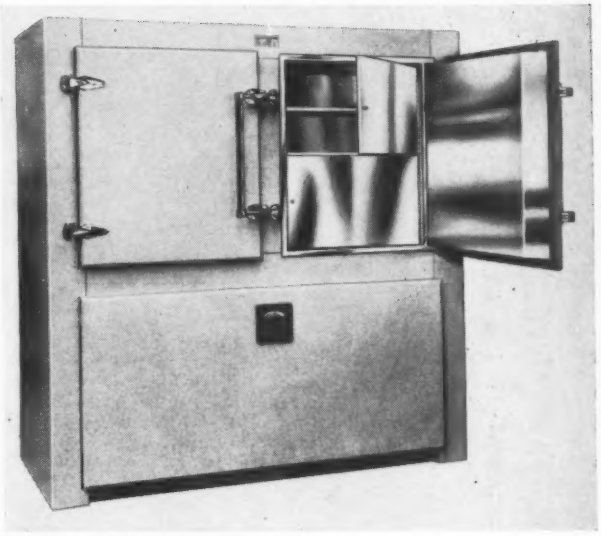


Filmosound 399 Specialist 16mm movie projector has lever on tip of takeup reel spindle which automatically disengages the rewind gear when a reel is removed. Rewind safety interlock prevents common cause of film breakage. Automatic action is helpful in classroom use when several people may be operating projector. Bell & Howell.

For further information on any of the items described on these pages, please circle the appropriate number on the postage-paid card opposite page 128.

923. Nephelometric standards

Four permanently stable references covering the range from almost clear solutions to turbidities normally found in nephelometric studies expedite nephelometry in laboratories and clinics. References are not subject to instability inherent in suspensions of solids in liquids. References are actually microscopic dispersions of one liquid in another, have the same specific gravity. Each reference comes in a turbidimetric cell sealed with a plastic cap embossed with letters identifying the increasing order of turbidity. Cells fit the cell compartment of the Fisher Nefluro-Photometer. Fisher Scientific Co.



924. Utility cabinets

New four-compartment, vertical type utility cabinets are designed for pharmaceuticals, storage of tissues, lifetime storage. Capacity, 24 cu. ft. Each compartment has 2 refrigerated shelves. Models available in —60° F., —90° F., and —120° F. Refrigeration is provided by water cooled compressors. Insulation is Fibreglas and varies from 6″ to 9″ in thickness. Interiors are all stainless steel, exteriors are galvannealed steel, finished in sand-tan or white enamel. Hudson Bay Co., division of Labline, Inc.

925. Diagnostic instruments

Coldlite instruments utilize new illuminating principle. Light is transmitted to deep area of examination without any obstructing light carrier. Light source is installed in instrument handle, produces concentrated non-glare illumination that is completely shadow free. E. Miltenberg, Inc.

926. Portable water demineralizer

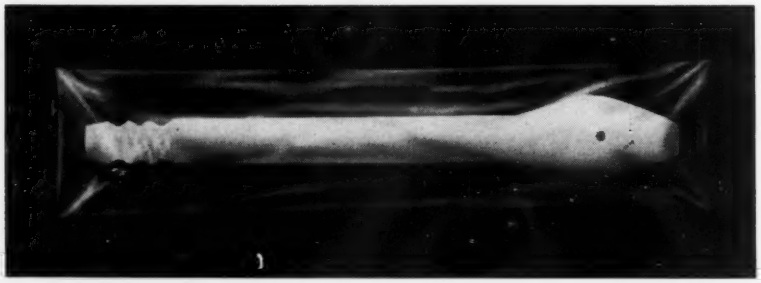
Completely portable water demineralizing unit does not require electrical outlet for monitoring water purity. Unit, known as Lab-Flow, attaches to any water faucet or gravity flow reservoir and immediately delivers water of highest purity up to 14 megohm resistance and at a maximum of 60 gallons per hour. Comroe Laboratories.

927. Sterile blade package

New sterile blade package is being distributed, with sterile B-P Rib-Back blade of carbon steel, heat sealed in a moisture proof and puncture resistant envelope that can be autoclaved. Easily opened, re-inforced envelope permits nurse to attach knife handle to blade while it is in opened package. Available in one gross boxes. Bard-Parker Co.

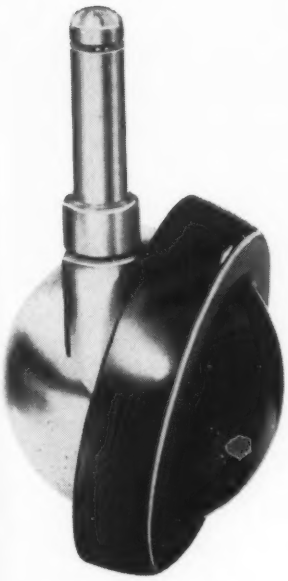
928. Disposable enema tips

"N-tips," enema tips are made of polyethylene plastic, to be used once, then discarded. Special design permits easy insertion, assures effortless retention, simple withdrawal. Wolf X-Ray Products, Inc.



929. Nebulizer

Nebulizer generates particles of drugs in the effective therapeutic range of .5 to 3.0 micra, at flow rates as low as 3 l.p.m., or as high as 15 l.p.m. Warning whistle in outlet tubing sounds if there is an obstruction. Head is made to be used with a large-size tubing, but adapter makes use with small tubing possible. Bottle is of non-breakable polyethylene. Ohio Chemical and Surgical Equipment Co., division of Air Reduction Co., Inc.



930. Record dividers

Dividers have been designed to separate successive hospital charts of readmitted patients. Used for tabbing and indexing charts, dividers can be seen easily at a glance. Suitable for unit or serial numbering systems. Physicians' Record Co.

931. Thermometer set

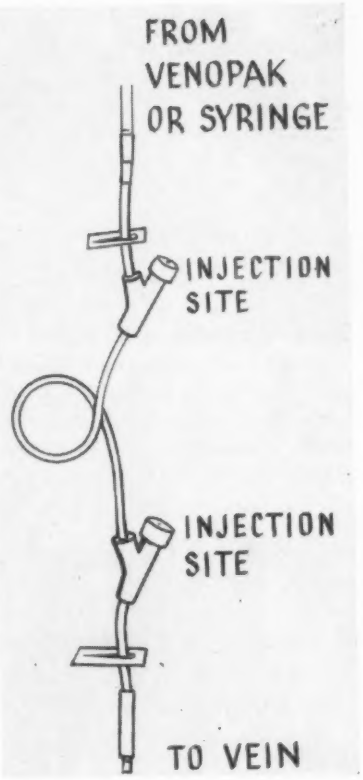
"Temp-Kit," includes easy-reading, certified fever thermometer, spillproof sterilization jar for proper sterilization, and a case for safe storage of the thermometer. "Steri-Jar" is fitted with special cap and gasket which are removable to permit the jar to be filled with sterilizing fluid. Chase Mfg. Co.

932. Rubber caster

Caster operates on inclined axle principle which forces instantaneous swiveling action at lightest touch. Working parts of caster are totally shrouded and are lifetime lubricated upon assembly. Precision enclosed construction prevents jamming through entry of dust, dirt, lint or other foreign matter. Caster swivels and rolls easily on conductive rubber tires, on deep pile carpet or smooth floors. Sierra Engineering Co.

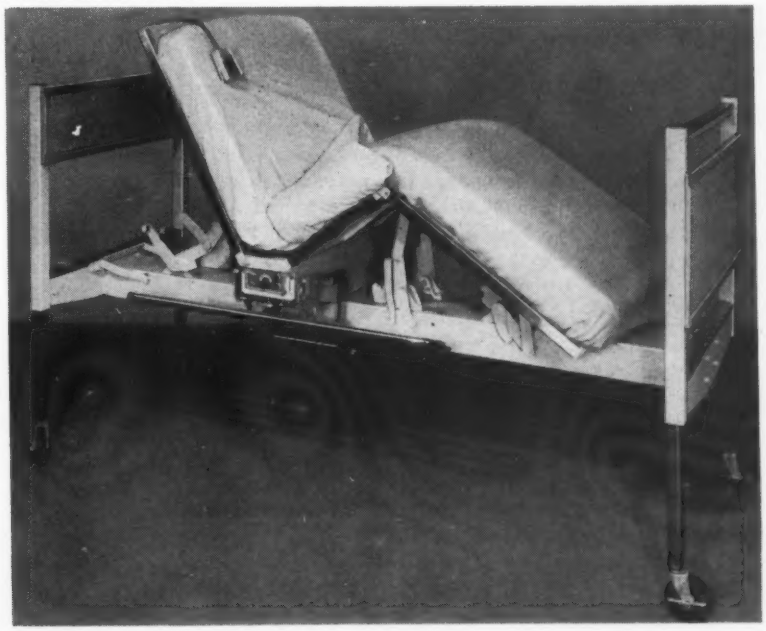
933. Disposable I.V. set

Disposable intravenous set permits administration of other medications freely and quickly without altering original connection. Venotube Twin-Site set can be used as extension set in giving infusions and transfusions, and for syringe or drip administration of anesthetics. Set consists of 30-inch small lumen plastic tube equipped with Luer adapters, two pinch clamps, and injection sites near each end of tube. Abbott Laboratories.



934. Electric hospital bed

Push button electric hospital bed has eight distinct motorizing actions. Simplified steel construction permits easy access to housing containing all electrical mechanisms. With control, bed can be raised to 36½" and lowered to 21½", a range of 15". Time saving features include special, easy-to-clean, 3-piece mattress panels which eliminate need for bed boards; side rails which store under mattress panels, permitting full working clearance for nursing personnel; hand-controlled motorized foot panel which easily achieves Trendelenburg position. American Metal Products Co.



Films, New Literature

940. Film strips

Scientific exhibits, shown at medical meetings throughout the country, are now portrayed on filmstrips, available for distribution. Six outstanding exhibits are pictured on three filmstrips, with recorded commentaries describing medical and surgical technics. Lakeside Laboratories, Inc.

941. Use of bandage

"Clinical Use of Gauztex" is 16-page booklet on bandaging procedures. Described in detail, with diagrams, are various uses of sterile, self-adhering bandage. Procedures for bandaging in orthopedics, surgery, neurosurgery, and podiatry are covered. Useful as reference work or in classroom. General Bandages, Inc.

942. Quantity recipes

"17 Tested Quantity Recipes," printed to enable mounting on 5" x 8" cards, describes ways of using apples in entrees, desserts, salads, and beverage appetizers. Information includes size of pan to be used and number of portions per recipe. Processed Apples Institute, Inc.

Everybody's talking about Staph...

. . . and with good reason. Staph is a *real* trouble maker. Staphylococcus aureus—to be more formal—is vicious. It invades every part of the hospital. Wherever there are people, it can multiply. In dust, staph lives for weeks waiting to re-infect.

Once staph gets on the loose, there's no telling where it may turn up next . . . operating rooms . . . nurseries . . . patient rooms . . . laundry . . . food service. Among insidious troubles it can cause are postoperative wound infection . . . staphylococcal pyoderma . . . puerperal mastitis . . . staphylococcal pneumonia and enterocolitis.

(Editor's note: In fact, staph infection can pave the way for strep infection, too. If strep gets into a wound with antibiotic-resistant staph . . . parenteral penicillin won't stop or prevent strep infection even when the strep organisms are penicillin sensitive.)

Stopping staph troubles—or never letting them start—that's the problem. Careful attention to *total* environmental asepsis. . . critical evaluation of disinfection procedures and the disinfectants used . . . is an important part of the answer.

Take Lehn & Fink disinfectants, for instance. All three—Lysol®, O-syl®, and Amphyl®—kill even antibiotic-resistant staph. Besides being staphylocidal, they kill all pathogenic organisms . . . including fungi and TB bacilli . . . commonly known to cause cross infection in hospitals.

Let us show you how to use our disinfectants to control the spread of staph. Won't you write us at 445 Park Avenue, New York 22, N. Y.?

Professional Division
Lehn & Fink Products Corporation

943. Refrigeration list

The 1958 line of commercial refrigeration equipment is displayed in a newly published catalog insert. Fifteen models of the company's coolers, refrigerators, freezers, and ice-making equipment are described. Nor-Lake, Inc.

944. Heating tape uses

New electrical heating tapes that can be cut with scissors to required lengths are described in a 6-page bulletin that gives data on uses with glass and metal equipment. Arthur S. LaPine & Co.

945. Rubber gloves

Gloves made of five types of molded rubber and synthetic materials, in various weights, sizes, and types are introduced in Bulletin 1310-2. A selection guide showing the relative resistance of the different materials to nearly 200 common chemicals and the comparative physical characteristics of the materials is featured. Mine Safety Appliances Co.

946. Shell resin

Bulletin describes new development in powdered shell resin said to have improved qualities with regard to lack of odor, mold release, and rigidity. Resins and Chemicals Dept., Borden Chemical Co.

947. Sterilization chart

Improved methods of sterilizing surgical gloves are described in a new sterilization chart available for professional use. Experts point out correct technics to be used by hospital personnel in handling and sterilizing surgical gloves. Nine steps of glove care are described on an 8½ x 11" display card. Pioneer Rubber Co.

948. Kitchen trucks

Data sheet describes three stainless steel kitchen trucks. Full construction and dimensional details are given. S. Blickman, Inc.

949. Food service

New brochure, "Food Service in the Modern Hospital," explains in detail the concept of mechanized hospital food service. Included are diagrams, photographs, and feeding schedules. Samuel Olson Mfg. Co., Inc.

Above: The "Meals-on-Wheels" system is being explained at New England Hospital Assembly by Curt Marcus of the Stanley Supply Co. (second from right) to (l. to r.) Waldo L. Fielding, M.D., chief of obstetrics, George Robbins, M.D., chief of surgery, and R. Epstein, president, Allerton Hospital, Brookline, Mass. C-950

Above: Helen Darcy (l.), administrator, and Marjorie Munson, supervisor of nurses, Dedham (Mass.) Nursing Home, listen in on the Motorola radio pocket pager at NEHA. Jack Becker, Motorola, explains features of the 10-ounce, transistorized "Handie Talkie" system, for selective contact of key personnel. C-951

Exhibits in the TOPICS Spotlight

Above: L. E. Donnelly (l.), Acme Visible Records, Inc., explains the use of Acme Visual Control Panels to NEHA visitor, John J. Curry, city manager of Cambridge, Mass. The panels come in nine sizes, contain clear plastic tubes which are removable and may be shifted from one position to another. Colored inserts may be printed or typed for insertion on the panel. C-952

Right: The Barron food pump for forced feeding is demonstrated at NEHA by Lawrence Donovan, E. F. Mahady Co., as Edna Price, R.N., administrator, Winthrop (Mass.) Community Hospital, watches. Plastic tube permits passage of any strained food, with rate regulated by movement of ball bearings. C-953

Left: Mrs. Claudia Watson, clinical coordinator of Elliot Community Hospital, Keene, N.H., tries out adjustable leg rest on the new Colson Corp. hospital chair at NEHA. W. C. O'Shea, Colson, points out chrome-plated steel frame and non-marking rubber tires. Accessories for various chair models are interchangeable. C-954

Below: The Hospital Personnel Division, Marlin Industrial Division, Inc., displayed its hospital public relations photo-poster service at New England meeting. Material explains policies and procedures for gaining better public understanding. Ellen H. Boyle (l), administrator, Windsor (Vt.) Hospital, and Elizabeth C. Harris, R.N., industrial nurse, Goodyear Tire & Rubber Co., Windsor, listen to description by Frank Cunningham, Marlin. C-955

Above: Bactericidal and bacteriostatic action of "Triple-A" mop dressing is explained by Charles Sanner (second from left) and John Thompson, both of State Chemical Co., at Ohio Hospital Association meeting. Listening are Maxine J. Wise (l.), x-ray therapist, and Mrs. Helen Vance, R.N., urology department, both of Good Samaritan Hospital, Chicago. C-956

Above: At OHA, Mrs. Eunice Cline, Nusbaum and Associates, tells Viola Heinzerling (l.), record librarian, Good Samaritan Hospital, Sandusky, O., and Catherine O'Neill, record librarian, Providence Hospital, Sandusky, about Thomas Fazio Laboratories' new polyvinylchloride clinic dropper, which can be sterilized, is unbreakable, non-corroding. C-957

Above: Chester Scott (l.), Foster Refrigeration Corp., shows bottle rack for nursery formula refrigerator to William J. Miller, assistant administrator, Cuyahoga County Hospital, Cleveland, at Ohio convention. Refrigerator's insulation is vermin and moisture proof. Overlap doors increase storage capacity, condensing units are quiet, hermetically sealed. C-958

Above: Mead Johnson & Co. *Fluid Therapy Handbook* is shown to Dorothy Horning, nurse anesthetist, St. Thomas Hospital, Akron, by Paul J. Moratz, regional manager, at OHA. Handbook discusses objectives of therapy and dosage problems, gives information on solutions and on special fluid balance situations and their management. C-959

Below: Steri-Syringe Company of Ohio exhibited its disposable plastic syringes at the meeting. Inspecting them are Eleanor Ryan (right), and Grace Shoemaker, both nursing instructors at White Cross Hospital, Columbus, O. Robert Nathanson, president, Steri-Syringe, is at left, with L. N. Morris, vice president. C-960

Below: William H. Raglow (l.), Continental Hospital Industries, points out features of company's poison control center to OHA visitor, Paul Hayden, assistant administrator, Children's Hospital, Akron, O. Center provides single convenient location for poison antidotes, is portable for ward emergencies. C-961

Above: "Sux-Cert," skeletal muscle relaxant provided in the "Incert" additive vial for use with parenteral solutions, was displayed by Baxter Laboratories at OHA. Pat Pendergast (center), Baxter, explains its use to Lelia Meyer (l.), O.R.S., Middletown (O.) Hospital, and Arlene H. Randall, nurse anesthetist, St. Mary's Hospital, Cincinnati. C-962

Above: Frederick Haag (r), Haag Brothers, shows Charles E. Martin, administrator, Lancaster Fairfield Hospital, Lancaster, O., new "Super Spread" for hospital beds, made of nylon and cotton, washable, preshrunk fabric. Spread, part of Haag OHA exhibit, is available in variety of colors and patterns, including cowboy motifs for children. C-963

Above: In the Amsco Hospital Liquids, Inc., booth, at Association of Operating Room Nurses' congress, Gerald Hendricks, Amsco vice-president, discusses with O.R. nurse company's line of parenteral and surgical solutions, blood collection and transfusion bottles, and AMSCO disposable administration and donor sets. C-964

Above: Don Peters (l.), and Eugene Howard, Surgical Products Division, American Cyanamid Co., explain features of Davis & Geck sutures to Jeanne Najar, R.N., clinical instructor in the operating room, Los Angeles County General Hospital, and a group of nurses who attended International College of Surgeons sessions for surgical nurses. C-965

Below: At ICS, Don Richards (l.), Richards Manufacturing Co., and assistant show new pneumatic, inflatable tourniquet to (l. to r.): Doris Boone, R.N., and Matty Jackson, R.N., director of nursing, both from East Side General Hospital, Los Angeles; Gloria Hicks, R.N., director of nursing, Allied Hospitals, Los Angeles; and B. J. Johnston, R.N., assistant O.R.S., Foster Memorial Hospital, Ventura, Calif. C-966

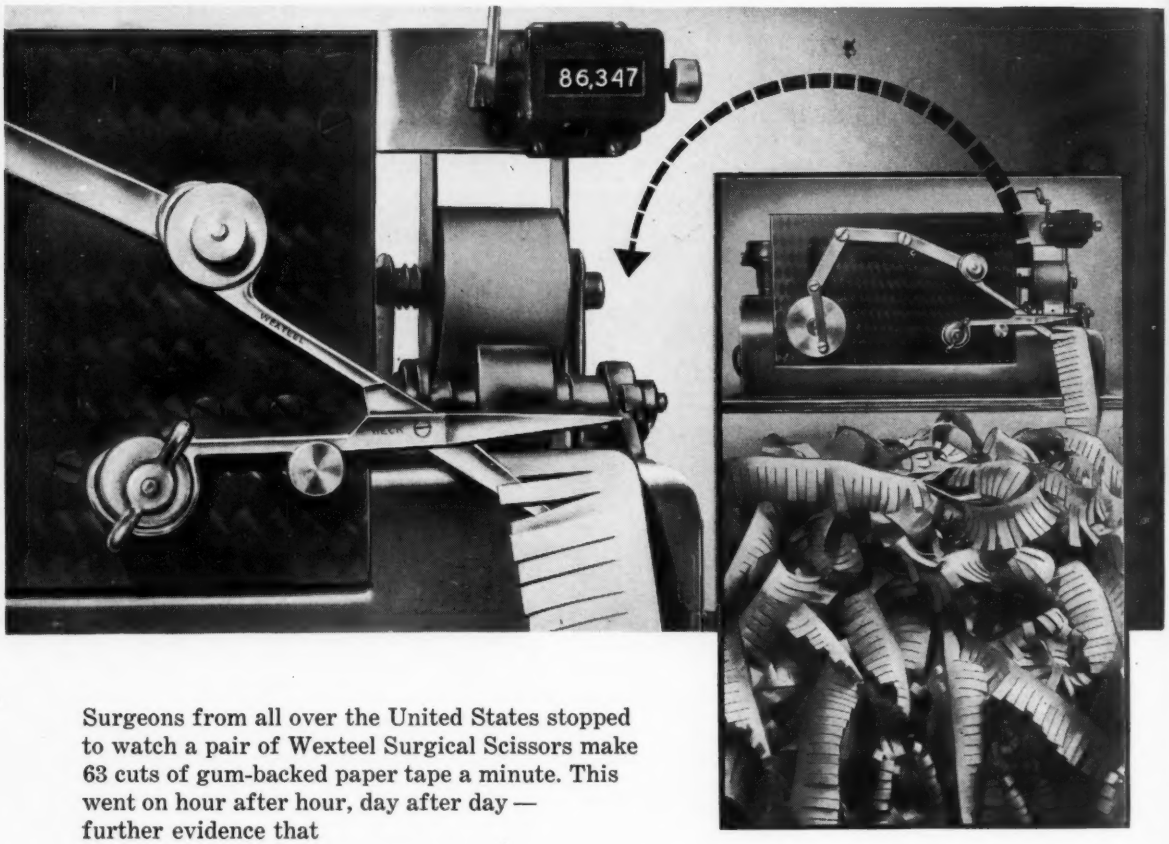
Below: Len Seuter, Cutter Laboratories, shows new plastic bag during ICS sessions to (l. to r.): Jerry Peers, O.R.S., UCLA Medical Center, Westwood, Calif., president of Los Angeles AORN; Alice H. Tastor, R.N., director of nurses, Rio Hondo Hospital, Whittier, Calif.; and Gertrude M. Harte, O.R.S., Studebaker Hospital, Norwalk, Calif. At right is Dale Miller of Cutter. Exhibit also featured I.V. administration equipment. C-967

Demonstrated at the Convention of the American College of Surgeons

WEXTEEL SURGICAL SCISSORS

MADE 86,347 CUTS

without any sign of wear



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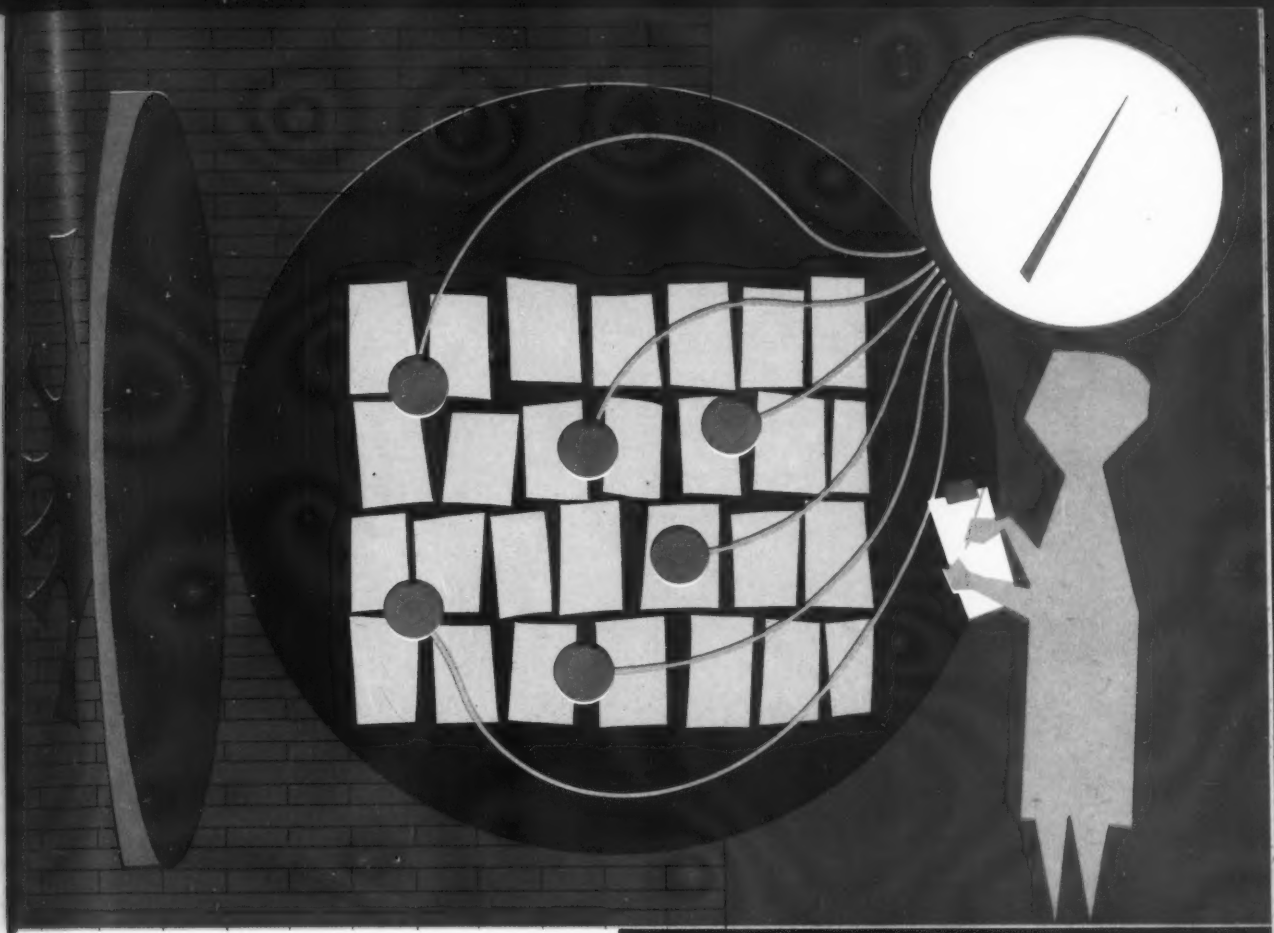

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Each tablet contains 330 mg. quinidine gluconate, and 205 mg. quinidine alkaloid.

Tablets are supplied in bottles of 30 and 100 by Wynn Pharmacal Corp.

Cream for Acne

Desitin acne cream is a combination of colloidal sulfur, zinc oxide, resorcinol, and hexachlorophene in a flesh-colored base, which is greaseless, quick-drying, water-washable.

The cream, designed to heal acne lesions and combat local infection, is supplied by the Desitin Chemical Co. in 1½-ounce tubes.

Oral Anticoagulant

Liquamar, brand of phenprocoumon, is suitable for either short or long-term anticoagulant therapy. Organon, Inc. is the manufacturer.

The drug is administered orally in tablets containing 3 mg. of 3-(1'-phenylpropyl) - 4-hydroxycoumarin. It is packaged in bottles of 100 and 1,000.

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Salcolan, manufactured by the Rich Co., is for local treatment of burns, scalds, and abrasions.

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Salcolan is supplied in half-pint jars, in ointment and in oil form, and in aerosol spray bottles.

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Tessalon is non-narcotic, and inhibits the cough reflex in both the sensory nerves in the lungs and the motor nerves in the medulla.

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Meticortelone soluble, a sterile powder form of prednisolone, has been released by Schering Corp. for intravenous use in cases of stress crisis.

The product is stable and does not need to carry a potency expiration date. It is compatible with normal saline and dextrose solutions, plasma or whole blood, and intravenous anesthetics.

Each intravenous Meticortelone soluble vial contains 50 mg. prednisolone, as prednisolone hemisuccinate, in the form of buffered sterile powder. Vials are packaged in boxes of 1, 25, 50, and 100.

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Personally Speaking

Capt. Alton C. Abernathy—has relieved **Capt. Benjamin N. Ahl** as commanding officer, Naval Hospital, Jacksonville, Fla. Capt. Abernathy was formerly commanding officer, Naval Hospital, Corona, Calif.

J. D. Arnold—is in charge of the laboratory and x-ray departments, Doctor's Memorial Hospital, Perry, Fla. **Mrs. Martha Pickering, R.N.,** has been appointed director of nurses at the hospital. Mr. Arnold was previously administrator, Citrus Memorial Hospital, Inverness, Fla.

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ADMINISTRATOR: Age 35. Masters degree in hospital administration. Member of A.C.H.A. 8 years experience. File F.F.J.

ASSISTANT ADMINISTRATOR: Age 40. Masters degree in hospital administration. Member A.C.H.A. 2 years assistant in 1,200-bed hospital; 1 year assistant in 400-bed hospital. File ‡A15.

PERSONNEL DIRECTOR: Age 46. Masters degree; major in Personnel administration. Last two years personnel director 300-bed hospital. File ‡Y15.

Carl R. Baum—has been named acting director, Children's Hospital of Philadelphia, replacing Herbert M. C. Wortman, M.D., former director, who has assumed similar duties at Beekman-Downtown Hospital, New York City.

George H. Berryman—has resumed the position of administrator, Chambers Memorial Hospital, Anahuac, Tex.

Robert T. Besserer — administrator, Nashville (Tenn.) General Hospital, since 1954, resigned to join the Webco Distributing Co., Inc., Albany, Ga.

Robert Boone—has been appointed administrator, Fayette County (Ala.) Memorial Hospital. He was previously administrator, Conechu County Hospital, Evergreen, Ala.

W. A. Boyce—acting administrator, South Carolina Baptist Hospital, Columbia, has been named superintendent-treasurer of the institution.

James Champer—has been appointed administrative assistant, Louis A. Weiss Memorial Hospital, Chicago. He will begin full-time duties in June, after his graduation from Northwestern University, Chicago, where he is a candidate for an M. A. in hospital administration.

John Christensen—has been appointed administrator, Centro-Asturias Hospital, Tampa, Fla. He was formerly at St. Joseph's Infirmary, Atlanta, Ga.

Elmer H. Clarke, Jr.—has been appointed assistant administrator, Huntsville (Ala.) Hospital. He has been in residency training at Kennestone Hospital, Marietta, Ga., and Tift County Hospital, Tifton, Ga., for the past year.

Robert C. Craft—has become controller of Uniontown (Pa.) Hospital, succeeding **Lewis V. Lentz,** who resigned. Previously Mr. Craft was bookkeeper and office manager for Atlantic Freight Lines.

Clovis Daily—has been named assistant administrator, Battle Hill Haven, Atlanta, Ga. He had been at Kennestone Hospital, Marietta, Ga.

Mrs. Mabel DeSanctis—is now administrator, Skin and Cancer Hospital, Philadelphia.

Mrs. Johanna Dilworth—has become educational director, University of Tennessee Hospital, Knoxville.

Mrs. Ethel C. Elliot—has been named administrator, Wickenburg (Ariz.) Community Hospital, succeeding **Floyd H. Wachter,** who had been acting administrator since February. Mrs. Elliot was formerly administrator, Pioneer Memorial Hospital, Prineville, Ore.

Orville L. Ferrell—has been named administrator, Cherokee County Memorial Hospital, Gaffney, S. C. He was previously assistant administrator, Rowan Memorial Hospital, Salisbury, N. C.

Mr. Ferrell succeeds **Claude L. Weeks** who has become administrator and treasurer, East Coast Hospital Association, St. Augustine, Fla.

Earl Grimes, Jr.—has become administrator, Biloxi (Miss.) Hospital. Previously he was administrator, King's Daughters Hospital, Brookhaven.

Succeeding him at King's Daughters Hospital as administrator is **T. W. Crowley,** previously business manager, Mississippi State Hospital, Whitfield.

Robert C. Grombach—is now personnel director, Hartford (Conn.) Hospital. He was formerly in the New York City office of Trans-World Air Lines.

Maxienne Harrison, R.N. — has been named supervisor, central supply department, Western Pennsylvania Hospital, Pittsburgh. Previously she was at Richmond (Va.) Memorial Hospital, where she organized the central service department.

Mary Suzanne Hewitt—has been appointed chief medical record librarian, University of Florida, Teaching Hospital, Gainesville, Fla.

Weldon Hoelscher—has been named assistant administrator, Clinic-Hospital, San Angelo, Tex.

Leroy T. James—has become assistant administrator, Presbyterian Hospital, Philadelphia.

Leslie W. Knott, M.D.—has been appointed assistant chief, division of special health services, Bureau of State Services, U. S. PHS.

Since 1952, he had been chief, Health Professions, Education Branch, Public Health Methods, in the office of the surgeon general.

Dominick J. Lacovora, M.D.—has been appointed chief medical officer and head of the psychiatric program, Federal Correctional Institution Hospital, Ashland, Ky.

Donald L. Laughlin—has resigned as administrative assistant, Abington (Pa.) Memorial Hospital to become business administrator, Levittown Public Recreation Association.

Allen E. Leary—administrator, Santa Rosa County Hospital, Milton, Fla., since 1955, has become administrator, Telfair Hospital, Savannah, Ga.

Mrs. Hazel A. MacMaburns—medical records librarian, Pierce County Hospital, Tacoma, Wash., since 1943, retired recently.

Arthur E. Miller—has become assistant director, Salt Lake County General Hospital, Salt Lake City, Utah, replacing **John O. Yale**, who took a position in Sheridan, Wyo. Mr. Miller was previously assistant administrator, San Jose (Calif.) Hospital.

Parker Morton—has become administrator, Eastern North Carolina Baptist Hospital, New Bern. Previously he was administrator, Cape Fear Memorial Hospital, Fayetteville, N. C.

The name of the hospital was changed recently. Formerly it was known as Kafer Memorial Hospital.

F. Lloyd Mussells, M.D.—will become director, Peter Bent Brigham Hospital, Boston, June 15. At present he is executive director, Philadelphia General Hospital.

Ernest C. Nott, Jr. — has been named administrative assistant, North Broward General Hospital, Fort Lauderdale, Fla. He had been director of personnel and public relations, Baptist Memorial Hospital, Jacksonville.

Joseph H. Powell—has been promoted to assistant administrator, Baptist Memorial Hospital, Memphis, Tenn. He served his residency in administration at the hospital and has been an administrative assistant there since 1955.

Comdr. Charles V. Quigley— administrative officer, Naval Hospital, Bremerton, Wash., since 1955, has been transferred. He is succeeded by **Comdr. D. M. Honeywell**, previously the hospital's finance officer.

Mrs. Beatrice B. Riley, R. N.—has been named director of nursing, Winter Park (Fla.) Memorial Hospital. Mrs. Riley, who has been in the field 30 years, was previously at Anniston (Ala.) Memorial Hospital.

At the same hospital, **William Kelly** has been appointed chief laboratory technician. He was formerly at Emory University Hospital, Atlanta, Ga.

Florence J. Roupp, R.N. — has been promoted from director of nursing education to director of nurses, Carlisle (Pa.) Hospital.

Gordon H. Russell—resigned in February as administrator, Crane (Tex.) Memorial Hospital.

Sister M. Frederica—has been appointed administrator, St. Joseph Hospital, El Paso, Tex.

Sister Mary James—formerly operating room supervisor, has been appointed assistant administrator, St. Paul's Hospital, Dallas, Tex.

Sister Regula—has been appointed superior of St. John's Hospital, Springfield, Ill., succeeding **Sister Rene** who has been transferred to St. Joseph's Hospital, Highland, Ill.

Col. Robert B. Skinner, M.D.—recently commanding officer, Tokyo, Japan Army Hospital, has been named commanding officer for the Martin Army Hospital, Fort Benning, Ga., now under construction.

Leon Sylvester, Jr.—has succeeded **Don Angell** as business manager, Onslow Memorial Hospital, Jacksonville, N. C.

Jack E. Thomson—retired recently as administrative officer, U. S. Public Health Service Hospital, Seattle, Wash., after 15 years' service.

Lawrence C. Walker—assistant administrator and business manager, Iredell Memorial Hospital, Statesville, N. C., resigned in February.

Roger L. Wardlow—has become administrator, Chester (Pa.) Hospital.

(Continued on page 126)

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A Simple Technic for the Differentiation Of Tubercle Bacilli and Saprophytic Mycobacteria*

By J. F. Coster and A. Manten†

• Presumably because of improved standards in the treatment of tuberculosis in recent years, there has been a gradual decrease of cultures of tubercle bacilli obtained from the various clinical specimens which are regularly sent to the tuberculosis department of this institute. The decrease does not only show in the relative number of cultures positive for tubercle bacilli but is also evident from the lower "degree of positivity," i.e., the number of colonies per tube, which indicates that most specimens contain only a very small number of tubercle bacilli, if any.

DIFFERENTIATION NEEDED

Simultaneously with this development, it has been observed that there has been a proportional increase of false "positive" cultures due to the growth of saprophytic or commensal or doubtfully pathogenic mycobacteria. As several strains were found closely resembling *M. tuberculosis*, especially the bovine type, an attempt has been made to find methods of differentiating saprophytes from strict parasites. Since the introduction of isoniazid, guinea pig inoculation is no longer a reliable means of differentiation, as isoniazid-resistant strains may erroneously be taken for saprophytes, owing to their attenuated pathogenic properties.

Several methods of differentiation have been tried, including Dubos' and Middlebrook's neutral red test,[1] the ability to proliferate on simple media, such as glucose-broth, agar, or in the presence of 10γ of PAS per ml.[2] In this laboratory these methods were unsatisfactory in so far as some strains were encountered that showed an atypical reaction with one or more of these methods.

In the experience of the writers, the combined test which is described below was more reliable.

Three tubes of Löwenstein (modified Jensen-Bekker) medium (I, II, and III) were used, one of which (III) contained isoniazid in a concentration of 10γ per ml. Material from primary isolates of acid-fast bacilli which are suspected[3] of being atypical is transferred to these tubes in a thin central inoculation track. Tubes I and III are incubated at 37°C. for three weeks, and tube II for the same period at 24°C.

Growth occurring at 37°C. (tube I), in combination with the absence of growth at 24°C. (tube II), and on the medium containing isoniazid (tube III), is highly indicative of the presence of *M. tuberculosis*. Growth at 24°C. (tube II) is characteristic of the presence of a saprophytic strain. If, on the other hand, proliferation occurs in the presence of isoniazid (in tube III), either a tubercle bacillus of the isoniazid-resistant type or a primary resistant saprophytic species may be present. To decide between these possibilities a catalase test according to Middlebrook[4] is applied with a mixture of equal parts of 30 per cent hydrogen dioxide and 10 per cent Tween® 80 in water. In this test saprophytic mycobacteria are easily recognized by their prompt and abundant production of foam, whereas pure cultures of tubercle bacilli resistant to 10γ of isoniazid per ml. are invariably[5] found to be catalase negative. In addition, a few saprophytic strains were encountered that were only moderately catalase positive: these were all able to grow at 24°C.

It is important to note that the catalase test should only be carried out with the culture on a solid medium containing 10γ of isoniazid per ml. A medium without this substance allows the proliferation of tubercle bacilli of normal drug susceptibility which are catalase positive. That this point should not be overlooked follows from other experiments in which 57 of 119 fresh isolates from isoniazid-treated patients were found by one of the present writers to contain, on primary isolation on Löwenstein medium (without isoniazid), a mixture of catalase-positive and catalase-negative bacilli.

CULTURES COMPARED

Up to the present time, 1,735 Ziehl-Neelsen positive cultures isolated from approximately 25,000 clinical specimens have been investigated, including also the directly recognizable strains of tubercle bacilli for comparison. The results of the test are shown in table 1.

It may be seen in the table that 1,527 strains responded to the tests in a way which is considered typical of normal tubercle bacilli. The pathogenicity of 180 of these strains was ascertained by injection into guinea pigs, as a result

(Continued on next page)

*Reprinted with permission from *The American Review of Tuberculosis and Pulmonary Diseases*, November, 1956, pp. 958-60.
†National Institute of Public Health, Utrecht, Netherlands.

TABLE I
Results of Test of 1,735 Cultures Isolated from 25,000 Clinical Specimens

Tube I Growth at 37° C.	Tube II Growth at 24° C.	Tube III Behavior on Media Containing Isoniazid			
		Growth	Catalase Reaction	Interpretation	Number of Strains
Growth	No growth	No growth		*M. tuberculosis*	1,527
Growth	No growth	Growth	Negative	*M. tuberculosis*	132
Growth	No growth	Growth	Positive	Saprophyte	13
Growth	Growth	Growth	Positive	Saprophyte	60
Growth	Growth	No growth		Saprophyte	3

of which 178 contracted a generalized tuberculosis. The two remaining strains appeared to be of attenuated virulence, comparable with the BCG type.

As none of the 132 isoniazid-resistant and catalase-negative strains exhibited any growth at 24°C. and, because of the typical appearance on a normal Löwenstein slope, they may also be regarded as tubercle bacilli.

COMBINED TEST BEST

Among the cultures, 76 were saprophytic strains, since they either were able to grow at 24°C. or were isoniazid resistant and catalase positive. In the long run, many of the strains were able to produce a bright yellow or orange pigment, although in an earlier phase of growth in preponderance they might easily have been taken for bovine tubercle bacilli. Of the 76 strains of saprophytic mycobacteria, 73 were isoniazid resistant and catalase positive, while only 63 were capable of visible growth at 24°C. within three weeks. Consequently, examining the capability of growth on a medium containing isoniazid, followed by a catalase test, is a better method to distinguish saprophytic or commensal mycobacteria from tubercle bacilli than the growth experiment at 24°C. solely, although the best results are obtained with the combined test.

Apart from the 76 saprophytic strains isolated in the present investigation, there was a collection of 145 strains of acid-fast saprophytes that had been isolated previously; their nonpathogenicity had been confirmed by injection into guinea pigs. These strains appeared to be invariably isoniazid resistant and catalase positive.

As the method described for the differentiation of tubercle bacilli and acid-fast saprophytes is relatively simple, requires less time than the traditional guinea pig method, and is also reliable for isoniazid-resistant strains, the guinea pig method is seldom employed in this laboratory at the present time.

In summary: Acid-fast saprophytes are easily differentiated from tubercle bacilli by a paired growth test, made both at 24°C. and on a Löwenstein slope containing 10γ of isoniazid per ml. maintained at 37°C. Both cultures are incubated for three weeks. A strain is considered to be not a genuine tubercle bacillus if multiplication occurs at 24°C. or if growth occurs on the medium containing isoniazid, provided that the latter growth is found to be catalase positive.

REFERENCES

1. Dubos, R. J., and Middlebrook, G.: Am. Rev. Tuberc., 1948, 58, 698.
2. Penso, G.: In *Bacilles Tuberculeux et Paratuberculeux*, Masson et Cie, Paris, 1950, p. 106.
3. Characteristics which arouse such suspicion are: the presence of only one or a small number of not entirely typical colonies, cultures which on smear show bacilli distributed more or less evenly over the slide, absence of cord factor, pigmentation, et cetera.
4. Middlebrook, G.: Am. Rev. Tuberc., 1954, 69, 471.
5. Marseille, A.: Nederl. tijdschr. v. geneesk., 1955, 99, 619.

Ohio Pharmacists Hold Hospital Service Seminar

The first in a series of seminars designed to aid hospital pharmacists in meeting the increased demands of modern practice was held March 1 at the Cleveland Clinic Hospital.

Sponsored by the Cleveland Society of Hospital Pharmacists in co-operation with Pfizer Laboratories, the meeting drew pharmacists, nursing supervisors, and administrators from Cleveland, Akron, and surrounding areas.

The role of pharmacy reporting in bringing to administrative attention the needs and additional service possibilities of the hospital pharmacy was outlined by Walter M. Frazier, chief pharmacist, Springfield (O.) City Hospital. He stressed the importance of continuous accounting procedures and pointed out that expansion of the hospital pharmacy and establishment of new services are related to "successful use of budgets and annual reports."

John G. Adams, dean, School of Pharmacy, Duquesne University, discussed the increasing complexity of prepared medications and emphasized the need for a firm background in basic pharmacology.

Other speakers included Burns Geiger, director of promotions, Pfizer Laboratories, and Joseph A. Oddis, staff representative on hospital pharmacy, American Hospital Association.

Administration Program Head Named by Emory U.

Roger Klein, former assistant superintendent, Cleveland City Hospitals, has been named director, graduate program of hospital administration, Emory University, Atlanta, Ga. The program is under the direction of the university's business school.

Since 1956, Mr. Klein has been assistant professor of hospital administration at the University of Pittsburgh. During this time, he directed a study of the university's programs in hospital administration under a grant from the U. S. Public Health Service.

(Advertisement)

Disposable Syringe Medication

A Review of Advantages and Three Outstanding Examples

AN INCREASED TREND toward the acceptance and use of disposable syringe medication is evident in hospitals throughout the country. Many "standard" hospital parenteral products are now being offered in this relatively new dosage form by pharmaceutical firms. Consideration of some of the advantages of disposable items helps to account for this increasing demand.

Assured Sterility

Since some manufacturers (*e.g.*, Organon) supply a completely sterile disposable needle and syringe with the cartridge of medication, the danger of inducing infectious hepatitis or pyrogenic responses in patients is greatly reduced. In addition, the disposable units may also reduce the incidence of serum sickness and anaphylactoid reactions in hospital personnel. Protection is afforded the person preparing the injection, since no withdrawal of a needle from a vial is necessary. Thus there is little risk of puncturing or scarifying his skin.

Expedites Medication and Charges

The time consumed by nurses and pharmacists in preparing injections is greatly reduced through use of disposable units, since these are always ready for immediate use. This allows nurses to spend more time in actual patient care. In addition, since the disposable unit is completely used up after each injection, the patient need not be charged for a full multiple-dose vial nor need the hospital pharmacy assume the loss for a partially used vial.

No Waste

Precision dosages are assured in the disposable units. This decreases waste of medicament, facilitates inventory control, and increases the efficiency of the hospital pharmacy. In addition, central supply operating costs are reduced through fewer syringe breakages, and reduced need for washing, assembling, sterilizing and storing hypodermic equipment.

Better Patient Psychology

Patient comfort and well-being are increased when the patient becomes aware that the needles are used only once and discarded. In addition, each needle is new, burr-free, and sharp, minimizing the pain on injection.

Economy

Some manufacturers (*e.g.*, Organon) price their disposable units so that the hospital pays only the cost of the medication itself plus the manufacturer's cost for the disposable needle and syringe. This helps make medication administered in disposable units economical, and, when the other advantages of disposable units are considered, a real advance over the use of standard hypodermic equipment with multiple-dose vials.

In line with the trend toward increased hospital usage of disposable syringe medication, Organon Inc. of Orange, New Jersey, a pharmaceutical firm with more than two decades' experience in the manufacture and marketing of quality parenteral products, recently introduced three of its hospital products in disposable unit form. These products are Cortrophin®-Zinc, Liquaemin® Sodium, and Adrestat® (F). Each of these products is available in a package containing a 1-cc cartridge of medication and a sterile B-D®* Disposable Syringe. The packaging of this Organon disposable unit is unique in that the needle and syringe are packaged in a sterile plastic bag, assuring sterility to the moment of use.

Cortrophin-Zinc is Organon's exclusive aqueous suspension of long-acting corticotropin (ACTH) with zinc hydroxide. It provides therapeutic ACTH activity for far longer periods than can be obtained with ACTH in any other vehicle. In disposable units, Cortrophin-Zinc 1-cc cartridges are available in two strengths: 40 U.S.P. units of ACTH per cc, which provides ACTH activity for 72 or more hours, and 20 U.S.P. units of ACTH per cc, which provides ACTH activity for 36 or more hours. With its wide range of indications (over 100), Cortrophin-Zinc in disposable unit form is a valuable hospital item.

Liquaemin Sodium (Heparin Sodium) is America's first and finest heparin. Its usefulness in the prophylaxis and treatment of thromboembolic and atherosclerotic disease is well established. In disposable units, Liquaemin Sodium 1-cc cartridges contain 20,000 U.S.P. units of heparin sodium (approx. 200 mg.) in aqueous solution. This strength and form of Liquaemin provides prolonged anticoagulant activity equal to that of the same concentration of heparin in gelatin, and without the inconveniences of a gelatin menstruum.

Adrestat (F) is Organon's systemic hemostat (Carbazochrome Salicylate) indicated in the prevention and control of bleeding and oozing. In disposable units, Adrestat (F) 1-cc ampuls contain 5 mg. of adrenochrome semicarbazone (as 130 mg. carbazochrome salicylate**). This form of Adrestat (F) is particularly useful in emergency clinics and for pre- and post-operative use.

Further information on these three products as well as extra copies of this article for use in presenting the advantages of disposable syringe medication to Formulary or Therapeutics Committees may be obtained by writing to Hospital Sales Department, Organon Inc., Orange, N. J.

References: Bogash, R. C. and R. Pisanelli, *Hosp. Mgt.*, *80*:82 (Nov.-Dec.) 1955. Hunter, J. A., *et al.*, *Hosp. Mgt.*, (Mar., Apr., May) 1956. Skolaut, M. W., and W. H. Briner, *Bull. Amer. Soc. Hosp. Pharm.*, *14*:675 (Nov.-Dec.) 1957. Tinker, R. B., *Bull. Amer. Soc. Hosp. Pharm.*, *13*:319 (Jul.-Aug.) 1956. (These references indicate sources of factual material and do not imply use of the preparations described herein.)

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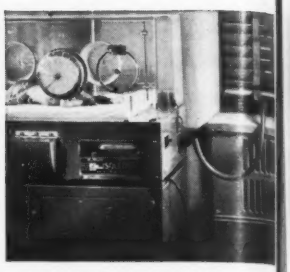

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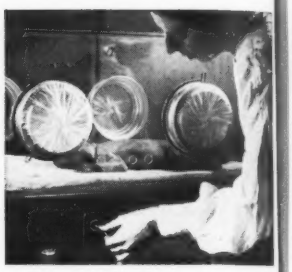

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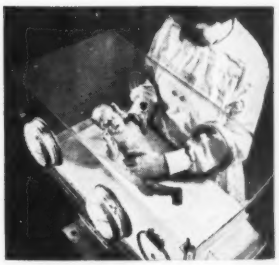

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Research in Human Reproductive Wastage: Implications for Public Health*

By John Whitridge, Jr., M.D.**

• In assessing the public health implications of research in reproductive wastage let us look briefly at the present situation in maternal and child health, with particular attention to maternal health.

Among the many important developments of the past few years, two in particular should be recognized. First, in this country, at least, many of the problems concerned with the quantitative survival of mothers and children have largely been solved, or at least knowledge is available which if applied makes solution possible. (This is not so true in many less fortunate areas of the world, still struggling with the more basic aspects of maternal and child health.) As a result, however, we in the United States are devoting more thought and effort to emphasis on the quality of survival, particularly in relation to the product of conception and the welfare of the whole family. This is an encouraging trend.

A second, but disturbing, development is that the field of maternal and child health is now so well accepted that in some degree it has become "cold turkey." Illustrative is an event that took place recently at the hearings on the budget of the State Health Department before the Maryland Legislature. One of the younger legislators who had been listening for several hours to plans for spending hundreds of thousands of dollars on mental health, cancer cytology, chronic disease hospitals, virology laboratory services, and so forth, without raising an eyebrow, suddenly came across an item in the budget book that surprised him and he asked "Oh, does the health department have clinics for expectant mothers?"

The first health department maternity clinics had probably been started long before he was born, but they have become such a routine part of public health as to be unnoticed among the newer, more dramatic programs.

In this consequence of success, in this acceptance as routine there lies grave danger ahead. By far the most important aspect of this exciting new research in reproductive wastage is the golden opportunity it affords us to revitalize maternal and child health and to make it a challenging field that will ultimately yield answers to many of mankind's most pressing problems.

Some of the important unsolved questions concern the factors, constitutional and environmental, that arrest or distort development of the fetus in utero or shortly thereafter, factors that tend to produce all types of congenital defects, behavioral as well as physical. What are the factors related to conditions that underlie socially maladjusted behavior, such as schizophrenia, alcoholism, and mental retardation; and what is the developmental period of greatest vulnerability to these conditions?

More specifically, knowledge is needed about the causes of premature onset of labor, of eclampsia, the factors leading to spontaneous abortion, exact methods for early detection of oxygen lack to the fetus, the effect on the fetus of maternal nutrition and of various drugs and biological agents, such as viruses. Answers to many of these challenges will be found only through newer ways of studying more precisely the why and the how of intrauterine development.[1]

To implicate means "to bring into intimate connection, involve, infold, entangle." How, then, are we to connect intimately ongoing research and public health? The term, public health, is used in this discussion in a very broad sense and is not limited to the role of health departments. On this basis, here are a number of ways in which the new concepts of reproductive wastage might be used to renew interest in maternal and child health and obstetrics.

Obstetric Teaching—Since those who learn today are the hope for tomorrow, this is a logical starting point. If obstetrics is to meet the challenge, we must begin to train obstetricians, nurses, and allied workers who will have an entirely new concept of obstetrics. Preoccupation with the mechanics of pregnancy and delivery must give way to the wider view that answers so many questions that have defied us throughout the centuries. This lies in intensive study of the whole process of human reproduction and human relationships.

(Continued on next page)

*This article is reprinted in part from the January, 1958 issue of the *American Journal of Public Health*, with permission of the author and publisher.

**Chief, Bureau of Preventive Medicine, Maryland State Department of Health, Baltimore.

No longer will it be enough to evaluate the capacity of the female pelvis to allow the passage of the child. More, much more, attention will have to be given to the woman's capacity to produce a vigorous, healthy infant and to be an adequate mother to the child.

Do not misinterpret these remarks. Most of the tremendous progress that has been made in maternal health in the past few decades has been founded upon the provision of good basic clinical obstetrics to an ever-increasing segment of the world's population.[2] High-quality clinical obstetrics remains as essential as ever, but upon this sound foundation we must erect a wider concept, a concept of the reproductive process as the laboratory par excellence in which research will find the answers to many vital problems. The cooperative prospective study of the etiology of cerebral palsy and related neurologic defects is but one example of our awakening to this truth.

This means a change in our teaching. Medical students, student nurses, residents, and interns must be led to understand and to assimilate this broader and more exciting concept of obstetrics and its relationship to other fields of human endeavor. This will mean the inclusion on the teaching staffs of obstetric departments not only of pediatricians and pathologists, as is often the case today, but as well of neurologists, psychiatrists, geneticists, physiologists, sociologists, and so forth.

By working with such teams the horizon of the obstetrician and the maternity nurse will be immensely widened. No longer will the interest of obstetricians be confined to the 300 or so days in the life of a woman beginning with conception and ending with her postpartum examination when her child is six weeks old. Preconceptional and postpostpartum events will become equally or even more important. Yes, even fathers will be important people, and eventually become more than a statistic listed under identifying data.

Personnel—To make even a small start toward this broader concept will require time and people and, as usual, money. If obstetricians of the future will also be physiologists, chemists, pathologists, and sociologists stressing research, who will be available to give mothers the high quality hour-by-hour care that is so essential?

I believe we have a person ideally suited for this task—the nurse-midwife. The certified nurse-midwife is competent to conduct the course of normal labor, perform normal deliveries, and to work on the obstetrical team in such a way as to relieve the new high-powered obstetrician of the performance of duties that in most instances will not require his advanced skills. He would be available when things went wrong, but not for normal labors and deliveries.

A pattern of this type would probably do much to make both obstetrics and maternity nursing more popular fields. The rugged life imposed by long, unpredictable hours of work is no doubt an important factor in their unpopularity. But is it not also probable that our present narrow concepts have been equally responsible for their lack of appeal? The evolution from maternity nurse to nurse-midwife with the attendant increase in responsibility and sense of achievement should certainly make recruitment easier in the field of nursing. Training facilities for nurse-midwives will have to be increased a hundredfold and more. The metamorphosis from mechanical accoucheur to obstetrical scientist should prove more alluring to young physicians.

What, then, of the practicing physician in the field of obstetrics? Do all obstetricians put on long white coats and retire to a laboratory? Not at all. With this new concept of obstetrics the physician assumes an even more important role than before. There will still be the private practice of obstetrics, but with the obstetrician giving primary attention to the broader aspects of his specialty, including psychologic and sociologic as well as physical care. He will use his specialized background and surgical skills, and turn over to his co-worker, the nurse-midwife, more of the regular technical aspects of the care of normal pregnant women.

Relation to Other Specialties—That there is a relationship between the reproductive process and its attendant hazards to the fetus and the ultimate development of the many various crippling conditions of children is generally conceded, even though the exact mechanisms of production are often not known. Cerebral palsy, mental retardation, various neurologic defects, to name only a few, are conditions presumably originating in utero or in passage through the birth canal.[3]

Is it too far-fetched to imagine that there may be a hitherto unsuspected relationship between intrauterine life and the development of certain chronic illnesses in older persons? For example, 10 minutes of hypoxia may cause permanent brain damage to one fetus. Might not another fetus subjected to the same lack of oxygen suffer permanent damage to the coronary vessels and be predisposed to myocardial infarction at age 35 or 40? Radiologists and geneticists are certainly becoming increasingly interested in the effects of radiation in the unborn fetus, either from natural radiation, x-ray pelvimetry, or atomic fallout.[4]

Hospitals—Aside from the many obvious implications to hospitals in what has been said, there are several special problems which sooner or later the hospital administrator must face, if and when the old order changes. First, more obstetric beds will be needed, particularly for women with prenatal complications requiring prolonged and often expensive hospitalization.

One or two examples will suffice. The treatment and control of preeclampsia with avoidance of de-

livery of a premature infant and the prevention of spontaneous premature onset of labor in an apparently normal patient often require weeks of hospital care. The magnitude of the problem of premature onset of labor is indeed great. There is probably no other single catastrophe that has such a profound effect upon both the quantity and quality of newborn survival. Until such a time as our new obstetrical scientists explain the cause of the normal onset of labor at term, prolonged hospitalization, with or without expensive endocrine therapy, seems our only hope of success. This therapy is costly, but no more so than caring for the premature infant after delivery, nor does the best of pediatric care remove the threat of neurologic or other disability in prematures, for this is basically an obstetrical problem.

A second responsibility hospitals must prepare to assume is that of maintaining improved records and reporting. Every delivery will have added importance, since it will have become part of a vast nationwide, even worldwide, research project. If we could predict, during the mother's pregnancy, which child will turn out to be mentally ill, retarded, or have cerebral palsy, records would not be so crucial. But since advance knowledge of this type is not possible (a blessing for prospective parents), the only hope of establishing cause and effect relationships is by means of accurate complete records of every pregnancy, labor, and delivery.

Hospitals and individual nurses and physicians will be more ready to devote added time to record-keeping only if they feel they are playing a part in an important new adventure. Record-keeping for the sake of keeping records that have little or no expected usefulness will never be successful.

A third problem for hospitals will be that of establishing special facilities for women with previous pregnancy wastage. These patients are known to be a high-risk group,[5, 6] and all women with previous abortions, fetal deaths, neonatal losses, or defective offspring must have intensive study and care by a specially trained staff. This is, of course, not peculiar to hospitals, but involves all medical services for women inside and outside of hospitals. Such services are time-consuming, costly, and require special planning.

Health Departments—The implications for health departments are limitless, ranging from modest increases in "routine" services to the fundamental responsibility of primary leadership. More will be said of leadership later, but short of that, there are several vital functions which should be logical responsibilities of health departments.

The first of these should be community co-ordination of all groups devoting their energies to this expanded concept of maternal health. Private physicians, hospitals, medical and nursing schools, training centers for nurse-midwives, other public and private agencies, medical societies, and many others will need to work according to a prearranged pattern that avoids duplication of effort and follows an integrated plan of attack. The diversity of activities and contacts, and the community-wide coverage characteristic of health departments make them ideal co-ordinators.[7]

If pregnant women are to receive the benefits of any new type of special care, nurses, physicians, and allied maternal health workers will have to devote more time to them. This will be especially true for the women with previous pregnancy loss mentioned earlier. Furthermore, women whose children have behavior problems or are potential delinquents are just as much members of the group requiring special care as those whose children have clear-cut gross brain damage or other physical defects. A recent committee recommendation in Maryland illustrates this view. The Health Committee of the Governor's Commission on Juvenile Delinquency[8] made a firm unequivocal recommendation that health departments double the number of maternity clinic sessions. Note that this occurred in discussing the prevention of juvenile delinquency, not the prevention of gross brain hemorrhage or congenital heart disease.

The basic intent was to give nurses, physicians, social workers, nutritionists, and others at least twice as much time to spend with each pregnant woman, not for more physical evaluation, but for the discovery of and attention to underlying emotional and psychologic problems which are so often neglected in the hustle and bustle of doing venipunctures and taking blood pressures.

Preparing women to be good mothers during pregnancy was felt to be a primary step at an optimum time for the prevention of juvenile delinquency. And once again, father was brought into the picture by recommending greatly increased emphasis on parent's classes to assist husband and wife to grow together in their abilities to assume the role of parents.

Health departments will also have an important role in records and reports. Trouble spots can be picked out via birth and death certificates and pertinent epidemiologic surveys of pregnancy wastage undertaken. In addition, the task of collecting, interpreting, and disseminating information concerning current research could fall to health departments.

Collection and dissemination of information are relatively easy, provided one has sufficient time to read the mass of material that crosses one's desk and enough mimeograph machines to record pertinent information. Interpretation is the key required to unlock this storehouse. Needed for this function will be persons familiar with what is going on, with enough background to make good assessments of the value and possible application of new research, and an opportunity to consult directly with those engaged in research.

Leadership—Strong, intelligent leadership will be necessary to make progress along the lines mentioned. The quality of leadership is infinitely more important than any other factor in deciding which

(Continued on next page)

group or agency will assume the leader's role. Actually local conditions should be the determining factor, and in any given community the strongest group should undertake the spark-plug function.

The medical societies, specialty medical groups, and the medical schools, hospital associations, nurses' associations, and health departments, among others, all have a vital interest. But there is one group that in my opinion is perhaps ideally suited to direct a venture of this sort—the maternal and child welfare committees.

Most communities have such a committee, though it may have some other name. Usually it is composed of public-spirited physicians who volunteer their time and meet perhaps once a month or maybe only once or twice a year. Most of these committees were brought into being to review maternal and/or selected types of fetal or neonatal deaths. Their basic purpose was educational and, undoubtedly, they have done much to improve the standards of obstetric and pediatric care in communities where they have operated.

Without any desire to diminish credit for past achievements, I suggest it is time for these committees to re-examine their roles. Would it not be possible for them, with the addition of a modest, paid full-time staff, to spearhead, direct, and instill enthusiasm for the "new look" in maternal health? Serving as a board of directors, the committee could delegate various components of the job to be done to the most suitable groups, thus bringing everyone into the picture, establishing a co-ordinated pattern, educating, convincing, selling ideas, and smoothing ruffled feathers.

Thus far we have scarcely mentioned the most important persons of all—the consumers—Mr. and Mrs. Expectant Parent. They will ultimately get what they want and we will have to give it to them. Our most important job, therefore, is to teach them to want what will produce the greatest benefits, not only for them, but for their children and their children's children. Today any matter relating to medicine seems to have great popular appeal. We should make bold plans and just as boldly take the public into our confidence. The woman who is punctured in the arm eight times during pregnancy to see what her antibody level is against Cox-sackie group virus deserves to know that she is playing part in a tremendous new research project.

Also, there should be ample lay representation on the maternal and child welfare committees in every community. There will be no widespread enthusiasm for the kinds of things I have been trying to describe until there is intelligent, hearty co-operation from the consumer.

In summary, then, I propose the following six-point program of action:

1. That the present concepts of obstetrical teaching and training be carefully re-examined with an eye to widening vastly the scope of obstetrics as a science.

2. That the training of certified nurse-midwives be undertaken on a scale never before attempted in this country, with the objective of making available complete maternity care to an ever-increasing proportion of our population. In so doing, both the obstetrician and the nurse-midwife with their special skills and broadened viewpoint will play a more important part than ever before in providing high-quality maternity care.

3. That workers in obstetrics and maternal health co-operate on an ever-expanding scale with workers in other basic health fields on a multitude of research projects where they have mutual interests and concerns.

4. That all hospitals, large and small, be made aware of the vital role they play in basic obstetrical research and in making possible further progress in the broad field of maternal health.

5. That health departments undertake to promote and further in every way possible a co-ordinated pattern of maternity care and research in maternity care based on the preceding concepts with particular emphasis on obtaining understanding and co-operation from the lay public.

6. That committees on maternal and child welfare, or their counterparts, in each community be urged to re-examine their functions in the light of present

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knowledge and to assume leadership in moving forward into new fields.

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(The following abstract is from a talk at the recent Illinois Congress on Maternal and Infant Care.)

Physical Status of Mother and Baby Must Be Considered in Anesthetic Choice

Premedication for Obstetrical Anesthesia Important as Presurgical Medication

The price for the relief of pain for the mother and baby is in the form of risk through physiological and psychological deviations. The selection of agents and technics should be made to cause the least degree of disturbance to the bodily functions of both mother and child.

The important facts in choosing between general or regional anesthetics are the condition of the baby, the mother, the obstetrical or medical complication, and the judgment, skill, and experience of the obstetrician and the anesthetist. Obstetrical and medical complications must be given the same degree of consideration as the condition of any patient undergoing a surgical procedure.

The incidence of neonatal death is not significantly different whether general or regional anesthesia is used. However, general anesthesia does increase the incidence of vomiting, and with it, the possibility of aspiration.

Many obstetricians allow the patients to have food during labor, even when general anesthesia is being planned. Some hospitals routinely serve food and liquids to patients in labor. Parenteral solutions should be used more often on the obstetrical service to meet the patient's need for nourishment.

Because the majority of births are normal, the administration of obstetrical anesthesia is regarded as requiring little or no skill. Actually, its administration is often complex because the physiological response of the mother differs from that of the child.

Also, physical equipment in delivery rooms is sometimes in poor repair or is totally lacking. Equipment for resuscitation, aspirating, and anesthesia which is found in the operating area, is not seen in some obstetrical services. Some delivery rooms do not have the type of obstetrical tables that permit instantaneous Trendelenburg or other desired positions. Sometimes, even if the equipment is available, the personnel does not know how to operate it.

As much thought should be given to the choice of pre-anesthetic preparation for obstetrics as for any surgical anesthesia. Discrimination in the choice of agent and in the technic used is most important since most of the agents in use now during the first stage of labor are devoid of side effects. Premedication should be chosen with thought of the anesthetic procedure to be used for delivery, physical status of the mother and baby, and time involved.

The choice of anesthetic, and of whether it is to be a general or a regional one, depends on physical status and complications. Some investigators feel that spinal anesthesia is the most dangerous for the pregnant woman. But for the patient who has recently eaten a heavy meal, or who has an infection, metabolic disease, severe toxemia, or is bearing the child prematurely, spinal anesthesia is much safer than a general one. If a spinal is to be used, it must be administered by experienced personnel, and the patient should never be left alone.

There is a wide variation of opinion among obstetricians as to the choice of anesthesia—regional vs. general, and what type of general anesthetic to use. One researcher has reported that infant death rates following the use of cyclopropane is three times higher than with any other obstetric anesthesia.

Others report that there is no significant difference between regional or general anesthesia insofar as neonatal mortality is concerned. However, the incidence of delayed onset of sustained respiration was found three times greater under general anesthesia than under regional anesthesia.

If the infant is premature or if obstetrical complication with fetal distress exists, regional technic is indicated. But this does not mean that general anesthesia is contraindicated.

The misuse of analgesic agents during the first stage of labor may be more detrimental to the premature than properly administered inhalation anesthesia would be. In obstetrical complications, when extreme depth is required, inhalation anesthesia is the method of choice.

The use of spinal, extradural, and caudal forms of regional anesthetic are contraindicated in the hypovolemic patient since they cause vasomotor block in varying degree.—*Arthur T. Shima, M.D.*, Oak Park, Ill.

Name Scholarship Winners For Housekeeping Course

Announcement has been made of the ten winners of $300 scholarships, given by Huntington Laboratories, for the tenth annual short course in hospital housekeeping, being held March 31 to May 23 at the Kellogg Center for Continuing Education, Michigan State University, East Lansing.

The course is cosponsored by Michigan State University and the American Hospital Association. Scholarship winners are:

Harry M. Crow, Jr., staff assistant, Allegheny General Hospital, Pittsburgh, Pa.; **Harold N. Griswold**, executive housekeeper, New Britain (Conn.) General Hospital.

James E. Hayes, housekeeper, Morrell Memorial Hospital, Lakeland, Fla.; **Mrs. Mary Hook**, assistant housekeeper, Oakwood Hospital, Dearborn, Mich.

Mrs. Alice L. Keefe, executive housekeeper, Wesley Hospital, Oklahoma City, Okla.; **Mrs. Rosemary Masterson**, supervisor, housekeeping department, Dukes Memorial Hospital, Peru, Ind.

Robert W. Sayre, assistant maintenance superintendent, Denver (Colo.) General Hospital; **Bobby K. Stevenson**, assistant property services director, Baylor University Hospital, Dallas, Tex.

Mrs. Virginia E. Stump, nurse's aide, Dixie Hospital, Hampton, Va., and **Mrs. Janice B. White**, housekeeper, Harlan (Ky.) Memorial Hospital.

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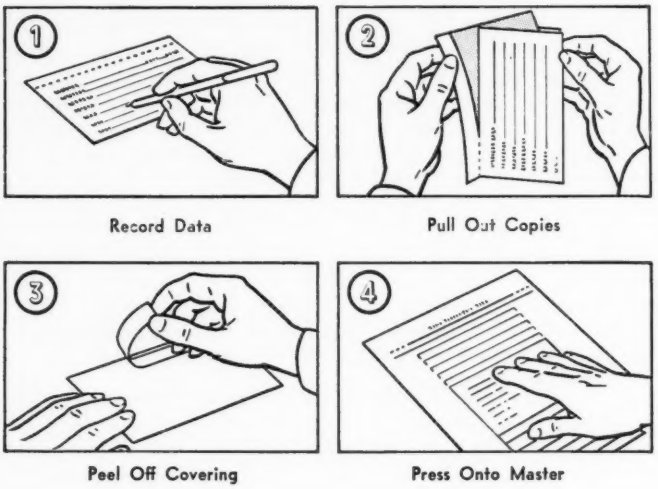

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Maternity Supervisor Wins Mary Roberts Award

Sister Paschala Noonan, O.P., maternity supervisor, St. Catherine of Sienna Hospital, McCook, Nebr., has been selected as the winner of the 1958 Mary M. Roberts fellowship award of the American Journal of Nursing Co.

The award, established to encourage nurses to develop their writing skills, is given to the author of the winning manuscript in a nationwide competition. Sister Paschala's entry was entitled, "The Nurse and the Premature."

Besides covering all tuition fees required for a year's study in journalism at a college or university of the winner's choosing, the fellowship carries a grant of up to $3,000 to help defray living expenses during the school year.

Blue Cross Commission Wins Foundation Award

The Blue Cross Commission of the American Hospital Association recently won a Freedoms Foundation award for outstanding contribution to Americanism during 1957.

The award, a bronze medal cast in honor of George Washington, was given to the commission for its program encouraging the use of discussion as a learning and educational tool in the nation's schools.

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Supplied with or without Administration Set

Cutter Dextran is stable ... It keeps well at room temperature and does not require refrigeration. Have it on hand at all times for use in acute emergencies.

SINCE CUTTER 1897

CUTTER LABORATORIES, Berkeley, California

J.A.M.A. report indicates DEXTRAN preferred over dextrose as routine initial infusion in surgery[2]

Recently, many investigations of plasma expanders have shown that the most favorable results were attained with the use of dextran as blood volume replacement during surgery. This report states that the use of a plasma expander as routine infusion with spinal anesthesia is more logical than the use of 5% dextrose in water since the latter has very little effect in supporting blood volume and can only replace water loss. It is suggested that plasma expanders be given up to 1000 cc. to the average adult with normal rbc mass, after which whole blood may be used.

Dextran is recommended for temporary circulatory support or as blood volume replacement in "... major operations of only moderate magnitude, where great blood loss is not anticipated."

For emergency use DEXTRAN reported agent of choice[3]

In a sound and conservative report on the use of dextran in the emergency room and in the operating room, it was described as "... very effective in raising the blood pressure ... probably the agent of choice for initial treatment of the shocked patient."

This summary of clinical experience in the treatment of patients with severe shock and hypotension points out that dextran may be used as a temporary measure while blood typing and cross-matching are being performed. It states that where blood loss is not great, dextran may be the only infusion required.

"No untoward actions occurred which could be attributed, even in part to dextran ..."

"... by reducing the requirements for blood, with the attendant expense for cross-matching in each case, the use of dextran materially lowered the cost of the transfusion service."

The authors suggest that dextran should be kept "... immediately available at all times for use in acute emergencies ... as in the severely injured or burned, as well as in elective surgery ..."

1. Pulaski, E. J.: Hawaii M. J. *15*:230, 1956.
2. Crandon, J. F.: J. A. M. A. *158*:264, 1955.
3. Ward, R. J., and Mathwig, J. E.: Northwest Med. *55*:186, 1956.

HOSPITAL Topics OR

Official bulletin for the
Association of Operating Room Nurses

Planning for the Houston Roundup

ENTHUSIASTICALLY developing plans guaranteed to make operating nurses head for the "Houston roundup" in 1959 are these committee chairmen, members of the Houston AORN, shown here with AORN national president Pauline R. Young. L. to r.: Marie B. Ellison, St. Luke's and Texas Children's Hospitals, program chairman; Miss Young; Imogene Creber, M.D. Anderson Hospital, promotion; Margaret Derrick, VA Hospital, advance registration chairman; Edna Ashy, VA Hospital, president, Houston AORN, general chairman; Margarethe Lyngholm, Memorial Hospital, hospitality; and Oneta Williams, St. Luke's and Texas Children's Hospitals, scientific exhibits. They are shown here relaxing over a cup of coffee after a recent meeting at the Shamrock-Hilton Hotel, headquarters for the AORN congress in February, 1959. Not present when the picture was made was Jackie Albertson, entertainment chairman.

(Continued on next page)

ROCK HILTON

Perched on the diving board at the Shamrock-Hilton's famous swimming pool, Marie B. Ellison (l.) and Oneta Williams give a sample of a hearty Texas welcome. These loyal Texans brought a Southwestern atmosphere to a party during the Philadelphia AORN, by turning out in their cowgirl togs.

Looking Ahead to 1959...

• The national Association of Operating Room Nurses now has a membership of more than 2,000 operating room nurses. This is a fine record for a group that was formally organized just a little more than a year ago. But let's not sit back and rest on our laurels. Instead, let us intensify our membership efforts, and double the number of members in the next few months.

Completed membership forms should be sent by the secretary of each local group to: Association of Operating Room Nurses, 305 W. 18th St., New York 11, N.Y. It is very important that the national headquarters have on file all the pertinent information about each member.

Members of the Houston AORN invited representatives of AORN groups in the surrounding area to attend their congress planning session in March. Shown here is the entire group at the meeting. Front row (l. to r.): Margarethe Lyngholm, Memorial Hospital, Houston; Imogene Creber, M.D. Anderson Hospital, Houston; Margaret Derrick and Edna Ashy, VA Hospital, Houston; Pauline R. Young, O.R.S., Hahnemann Medical College and Hospital, Philadelphia, and national AORN president; Marie B. Ellison and Oneta Williams, St. Luke's and Texas Children's Hospitals, Houston.

Second row (l. to r.): June Fisher and Fanny Tier, both of St. Joseph's Hospital, Houston; Martha Mayfield, private scrub nurse; Rose Pizzitola and Joyce Carpenter, both of St. Luke's and Texas Children's Hospitals; and Fannie Lou Spelce, M.D. Anderson Hospital.

Third row (l. to r.): Mavis Pate, Medical Center Hospital, Tyler; June Murphy, Mother Frances Hospital, Tyler; Sister Margaret and Sister Imogene, St. Joseph's Hospital; Agnes Dornak, St. Luke's and Texas Children's Hospitals; Audrey Bell, Parkland Memorial Hospital, Dallas; and Agnes Ptacek, M.D. Anderson Hospital.

Fourth row (l. to r.): Margie White, Doris Otto, Evelyn Jerabek, and Marjorie Nelson, all of M.D. Anderson Hospital; and Caroline Denman and Naomi Harbison, both of St. Luke's and Texas Children's Hospitals.

Let us have your suggestions for making the 1959 congress in Houston the best yet. It was very gratifying to receive so many letters of commendation about the Philadelphia congress, but please feel just as free to send letters of criticism.

Certainly all of us realize there is always room for improvement. We are eager to receive your suggestions for program topics, methods of group participation, and names of speakers. It is your association. We need your thinking, and we also want to know your problems.

Also, now is the time to start thinking of the persons you want to represent you as your national officers in this fast-growing association. Election will be held at the Houston congress.

I want to express my deep appreciation for the time and effort expended by the national officers and by all of you, to contribute to the increasing success of the AORN. Very shortly many of you will be receiving requests to be on committees, and I hope you will be able to serve.

Sincerely,
Pauline R. Young, R.N., President
Association of Operating Room Nurses

In the TOPICS Spotlight at Philadelphia AORN Congress

Additional news pictures from the fifth AORN congress. For TOPICS' report on the meeting, see pages 97-111 in the March issue.

A Philadelphia cameraman focuses on Pauline Young, AORN president, at a luncheon held during the congress. With her are Dr. Martin Chworowsky (l.), Albert R. Greenfield Center for Human Relations, University of Pennsylvania, and Leon J. Saul, M.D., professor of clinical psychiatry at the University and recipient of an award made by the Center.

"Improving Operating Room Work Relations" was discussed by the panelists shown below. They are (l. to r.) J. Thomas Freeston, vice president, personnel, Ethicon, Inc., Somerville, N. J.; Earl G. Planty, Ph.D., professor of management, University of Illinois, Urbana; and Edmund Kowalczyk, personnel director, Ethicon, Inc., Chicago.

Isadore Rosenfield (left, below) and Zachary Rosenfield, architects, New York City, spoke on "Planning and Designing the New Operating Room."

Above: The ballroom was a popular gathering place before and after meetings. Rose Wabersich, (l.) O.R. nurse and instructor, Lenox Hill Hospital, New York City, chats with Lillian Begley (center), clinical instructor, and Grace Woodside, O.R. nurse, both of Greenville (S.C.) General Hospital.

Above: Among the guests at a tea held during the congress were (l. to r.): Alma Mearion and Patricia Devine, O.R. nurses, and Anita McDonough, O.R.S., all of Metropolitan Hospital, Philadelphia.

Below: Two Canadian visitors at the tea were Helen McCallum (l.), O.R.S., and Margaret Walsh, assistant O.R.S., both of Lancaster (N.B., Canada) Hospital, shown with Elizabeth McAleese (r.), O.R.S., VA Hospital, Philadelphia.

Below: Enjoying a break during one of the general sessions are (l. to r.): Hilda Smith, O.R.S., Marlborough (Mo.) Hospital; Georgette Jewett, O.R.S., Lakeland Hospital, Elkhorn, Wis.; and Sylvia Wood, Assistant O.R.S., Community Memorial Hospital, Ayer, Mass.

Below: Virginia O'Neil, O.R.S., Brown County General Hospital, Georgetown, O., stopped at the tea table of Rose Breese (l.), O.R.S., Germantown Dispensary and Hospital, Philadelphia, and Mrs. Julia Boyle, O.R. nurse, Misericordia Hospital, Philadelphia.

Left: Another group gathered at the tea were (l. to r.): Coralee Mason, O.R.S., and Emily Cochlin, clinical instructor, both of Columbia Hospital, Pittsburgh; Kathleen Young Lucia, assistant director of the operating room, Barnes Hospital, St. Louis; and Grace Beckmann, clinical instructor, and Wanda Gardner, O.R.S., both of Elizabeth Steel Magee Hospital, Pittsburgh.

The trio above were (l. to r.): Bertha Warmbrodt, O.R.S., Bradford (Pa.) Hospital; Betty S. Kentner, O.R.S., De Graff Memorial Hospital, North Tonawanda, N.Y., and Mrs. Jennie Anderson, O.R.S., Kings Daughters Hospital, Duncan, B.C., Canada.

At left: Sessions for surgical nurses were again a feature of the annual congress of the U.S. and Canadian sections, International College of Surgeons, held in Los Angeles. Co-chairman of the "AORN Day" program committee was Jerry Peers (r.), O.R.S., UCLA Medical Center, and president, AORN of Los Angeles. She is shown here with Laura G. Jackson (l.), Chicago, ICS congress manager consultant, and Doris Batcho, R.N., UCLA Medical Center, who presided at the afternoon session.

TOPICS' Camera Covers ICS Nurses' Sessions

Above: Jerry Peers (l.) looking over program with Carlos A. Prietto, M.D., Los Angeles, who spoke on open-heart surgery.

Above: Participants in panel discussion on wound infections included Allyn J. McDowell, M.D., North Hollywood, Calif.; Zelpha Burbank, O.R.S., Hollywood Presbyterian Hospital; and Arneta Sanman, R.N., staff nurse, operating room, Good Samaritan Hospital, Los Angeles.

At right: Members of the panel on problem-solving were (l. to r.): William Bame, counseling psychologist, student counseling center, UCLA; Mrs. Mildred Simon, R.N., UCLA Medical Center; Evelyn Hamil, R.N., director of nursing service and nursing education, Los Angeles County General Hospital; and John Kent Harris, senior personnel technician, employee development, Los Angeles County Civil Service Commission.

Below: The Methodist Hospital of Southern California, at Arcadia, was well represented at the meeting. Those present included (l. to r.) Darlene Anderson and Fabeana Escarcega, both staff nurses in the operating room; Mrs. Evelyn M. Coon, R.N., assistant director of nursing; Mrs. Ethel West, O.R.S.; and Margaret Fisher, staff nurse, operating room.

Participating in panel on organization and management of recovery ward were (l. to r.): Robert M. Zollinger, M.D., professor and chairman, Department of Surgery, Ohio State University College of Medicine, Columbus, moderator; and discussants, Mary A. Connolly, R.N., assistant director of nursing, Memorial Center for Cancer and Allied Diseases, New York City; John M. Beal, M.D., associate professor of clinical surgery, and Valentino D. B. Mazzia, M.D., assistant clinical professor of anesthesiology in surgery, both of Cornell University Medical College, New York City; Tracy Storch, associate director, New York Hospital, New York City.

Recovery-Room Planning, Operation Discussed at ACS Nurses' Session

• *A problem clinic on providing intensive care for the patient in the postoperative period was one of the most popular features on the nurses' program during the American College of Surgeons' regional meeting in New York City in March. Here is TOPICS' report on the discussion. For other news of the meeting, see the April issue, pages 111-113.*

Administrator Can Be Key Figure In Establishing Recovery Unit

Concerned Primarily with Over-All Planning, Policies, Capacity of Unit

The administrator can be the key figure in helping or hindering the progress of the recovery unit. His responsibility is really the implementation of the decision to establish a recovery room. In the initial discussions, various planning groups are at work. The administrator concerns himself with the following:

1. **Joint planning**—in which there is active participation of all departments concerned.

2. **Determining basic policies** to cover the operation of the unit. At New York Hospital these policies were included:

(a) A nursing supervisor is in direct charge, with several nurses under her direction.

(b) The recovery room supervisor is authorized to discharge patients.

(c) The recovery room is to be operated specific hours of days, and days of the week. At other times, it is closed completely. If experience shows a need for providing extra hours of operation and if adequate personnel are available, this will be given future consideration.

(d) Every patient with general anesthesia is admitted to the recovery room unit and remains until the nurse in charge feels that he can be discharged.

(e) Patients are mixed without regard to sex or kind of room accommodations.

(f) Patients' private-duty nurses are expected to assist in the care of patients in the recovery room, under supervision of the nurse in charge.

(g) Visitors are allowed only if the patient is on the critical list.

(h) Patients are charged for recovery-room service for any stay longer than 30 minutes. The charge is related to the operating-room charge, which may be based on the complexity and time of surgery.

3. **Capacity**—determining the number of beds, space needs, and location. After defining the basic policy, the planning committee can then think of beds and space. No rule of thumb is possible to determine the number of beds needed. Each hospital must determine its own needs based on the number and kind of cases handled.

A minimum number of beds can be determined by listing the number and kind of cases which will be sent to the recovery room during the average operating day, and the order in which they are likely to arrive. The time of arrival and time of discharge are entered in the block of hours planned for recovery-room operation. Thus, it is possible to determine at a glance the number of cases which can be expected to be in the unit during any given hour. From 25 to 30 percent is

added as a safety factor to handle big patient loads.

The total needs for space can be estimated on the basis of 80 square feet per bed. One hundred square feet might be considered luxury accommodation. There must be ample space on both sides of the bed, and the floors around the bed must be kept clear of ancillary equipment.

Ideally, the recovery room is located adjacent to the operating room, or at least on the same floor. Delayed transportation of patients is thus avoided.

Planning for equipment begins early to assure its being available when needed.—*August H. Groeschel, M.D.*, associate director for professional services and director, outpatient department, New York Hospital—Cornell Medical Center, New York City.

Nurse Should Anticipate Trouble, Report It Promptly, Clearly

Should Look for Obscure Sources Of Trouble as Well as Obvious Ones

To know the possible complications of surgery is to be able to anticipate trouble. A keen sense of hearing is as important in detecting trouble as the sense of sight. Once trouble is found, it is imperative that the recovery-room nurse know *how* to report the patient's difficulty in words that will be quickly understood.

Preoccupation with treating an obvious crisis must not keep the nurse from watching for the possible simultaneous development of other complications, such as foot drop in the patient treated for hemorrhage. There are obvious and obscure sources of trouble—circulation can be as much impaired by a tight dressing as by the obvious plaster cast. The nurse's sensitivity must be as keen for one as for the other.—*Edna Danielson, R.N.*, director of staff education, Francis Delafield Hospital, New York City.

Recovery-Room Nurse Is Diagnostician In Critical Postoperative Period

Must Be Alert to Danger Signs; Responsible for Function of Tubes

Complications of surgery are spawned during the time of transition from the unconscious to the conscious state. In this period the recovery-room nurse is the diagnostician and must be able to interpret her findings. She must recognize warning signs of imminent danger and be able to find responsible help as soon as it is needed.

Cardiac arrest occurs in 1 in 1,700 surgical cases; one in four recovers. Speed in recognition and treatment is of the essence because brain cells will endure only three minutes of hypoxia.

The nurse is also "custodian of the tubes." Mismanagement of drainage tubes can cause serious complications. They must be patent and draining. In urological surgery, a clear waterway is as important as a clear airway. Double lumen tubes may be mysteries to many nurses, but there can be no hesitancy in the recovery-room nurse handling these tubes. Removing the clamp from a pleural catheter before the catheter is placed underwater can cause

(Continued on next page)

Three-act drama demonstrating total rehabilitation of patient with a broken neck highlighted program, was written and produced by nursing staff of the Neurological Institute, Columbia-Presbyterian Medical Center, New York City. Collaborating was a team from the organization training program of the Port of New York Authority Police Academy. Participants included (l. to r.): Susi Hoffman, R.N., Estelle Guidice, R.N., Sgt. Mark Uglesich, Arline Gleason, R.N., Sgt. Walter O'Connor, Daris Van Nortwick, R.N., Ptlm. Daniel Mihnevick, Ptlm. Maxwell Watkins, and (kneeling) Ptlm. John Perry, Ptlm. James Ruby.

pneumothorax; if the tube is kinked or not draining, subcutaneous emphysema can result.

The recovery-room nurse must follow vital signs critically, recognizing the bloody pupil as a possible indication of intracranial bleeding, being conversant with the complications of intravenous fluid administration, and recognizing the signs of transfusion reaction and of air embolism. She must be sensitive to the importance of rate of flow of intravenous fluids in the elderly patient.—*Richard B. Stark, M.D.*, assistant professor of clinical surgery, Columbia University College of Physicians and Surgeons, New York City.

Lists Drugs to Be Stocked In Recovery Room Unit

All Except Narcotics Should Be Kept in Unlocked Cabinets

If antagonists to anesthetic agents were available, they would be on the top of the list of those drugs stocked in the recovery room. Antagonists to the curare drugs and narcotics are available and are kept in the recovery room. Rapid-acting muscle relaxants are kept available to help in the rapid establishment of an airway in the distressed patient.

Resuscitatives are *not* stocked because resuscitation must be done mechanically and cannot be left to the action of drugs.

All drugs—except narcotics—must be kept in unlocked cabinets in the unit, because they are emergency measures needed at the exact moment of crisis.—*Valentino D. B. Mazzia, M.D.*, assistant clinical professor of anesthesiology in surgery, Cornell University Medical College, New York City.

Discussion

Q. Is there a place for the practical nurse and/or aide in the recovery room?

MISS DANIELSON: Definitely yes. Aides and practical nurses can fill in on many functions which require the efforts of two persons—for instance, positioning and turning patients. Then, too, all the picking-up and cleaning can be done by nonprofessional help.

DR. MAZZIA: It is most important to have the person most capable of caring for the patient actually give the care. No one below the level of a competent professional nurse can be entrusted with this kind of primary responsibility.

Q. Is postgraduate teaching in recovery-room care necessary?

GLADYS T. JONES, R.N., supervisor, recovery room, New York Hospital—Cornell Medical Center, New York City: Yes. The student nurse has only a superficial exposure to recovery-room work. One week of the total six weeks of O.R. experience is spent in the recovery room. The week includes four to six hours of lecture and closely supervised patient care.

Q. What are the legal implications for the R.N. who assumes responsibility for discharging the patient from the recovery unit?

DR. GROESCHEL: There is no statutory law to cover this point. The common law may vary from state to state. In a suit based on negligence, the nurse might be sued, but it would be incumbent on the attorney for the plaintiff to pinpoint responsibility on her.

Experts in the field of nursing and nursing education would be called to demonstrate that in specific instances the nurse had or had not done something right. A supervisor is hard put to find enough time to watch and observe all the people under her direction. If it could be shown that the nurse had failed to observe her subordinate carefully and a disaster occurred, then the supervisor would carry an element of responsibility.

Q. Are nurses given special training for intravenous therapy?

DR. STARK: Yes, and drugs which can be given by nurses assigned to intravenous therapy are specified and limited by hospital directives.

Q. What are the legal implications of nurses' doing intravenous work?

DR. GROESCHEL: The law varies from state to state. There is no statute governing the intravenous administration of drugs by nurses. The common law used is based upon previous cases in which legal action has been taken and decisions have been given. Each case has to be judged on its own merits—on the basis of expert testimony as to what is common practice in the given community.

Q. What place do narcotics have in the recovery room?

DR. MAZZIA: The most important thing is to give narcotics properly and to give them only for pain. In treating apprehension and anxiety, the barbiturates are used. When treating a restless patient, it is important to rule out cerebral hypoxia as a possible cause because a narcotic administered to someone in this state will cause death.

Q. How do you determine cerebral hypoxia, and how do you differentiate it from postoperative pain?

DR. MAZZIA: Observations of the patient with cerebral hypoxia are seldom consistently within normal limits. There are changes in vital signs—blood pressure, pulse, and respiration go through phases. There is first hypertension, then hypotension; tachycardia, then bradycardia.

The patient may be seen when vital signs appear normal, but if charting has been accurate, insidious changes will become obvious. Cyanosis will be present which may be difficult to detect under artificial light; however, changes in the coloring of mucous membranes and conjunctiva

may be more detectable. If there is any question in the nurse's mind, she must call for help before giving any narcotic.

Q. Does the recovery-room nurse extubate patients?

DR. MAZZIA: It is within the scope of her professional ability to do so, but the anesthetist accompanying the patient to the unit usually leaves the nurse with clear instructions on this subject.

Q. How can you plan intensive care in a hospital with no facilities for it?

DR. GROESCHEL: It has been a common practice for years to group the sickest patients in a unit close to the nursing station. This is an informal way of providing the best nursing care and the most of it. It is probably the only way to give this kind of care without a formally organized unit.

Impact of Cancer Surgery Depends On Whether Patient Is Normal

"Patterns of adaptation"—the syndromes designed to bring an individual's physical and emotional needs into harmony with the demands of his environment—evolve early in life in response to parental demands. When they are threatened or disrupted, anxiety is the result.

Body organs play an important role in the development of these patterns. When an organ is threatened or lost, the pattern is disturbed, and the patient may be left with a basic problem which is again unsolved. In some instances, a neurotic or even psychiatric pattern of adaptation, if it is not disrupted by disease or treatment, may be an asset in the restoration of the patient's equilibrium.

The cancer patient fears death, disability, and illness, mutilation, or loss through surgery of an important body part. Nurses who care for patients having surgery for cancer will be most helpful by learning all they can of the cosmetic and physical problems that each class of surgery entails.

The impact of cancer surgery in the individual patient depends on whether that patient is normal. Delay of surgery by the patient is his way of avoiding surgery. The patient's anxiety may interfere with communication between the nurse, the patient, and the physician. The nurse must remember that the patient's behavior is designed to protect him, and his dependency demands are intended to mobilize powerful professional figures around him.

Anxiety can actually be created in a patient by vague directions and explanations. Witness the patient who becomes rigid, developing aches and pains after a cryptic directive from the physician: "Don't move too much." Nurses can supplement the terse comments of the house staff and physicians and translate them into understandable words. Remember, the patient needs and wants to know more than "too much," "too little," and "don't, don't, don't."

Postoperative depression is usually reactive depression and may persist indefinitely. Acute schizophrenia may result in the patient who has been given more information than he can cope with. The problem is to get a patient who will cooperate in his treatment with a minimum of anxiety. One need not give an educational rundown on cancer—only enough facts to secure cooperation with ease.

In any rehabilitation program, the responsible persons should remember that there are cultural limitations of rehabilitation that preclude any one master plan's fitting every candidate.—*Arthur M. Sutherland, M.D.*, chief, neuropsychiatric service, Memorial Center for Cancer and Allied Diseases, and associate professor of clinical medicine, Cornell University Medical College, New York City.

Lists Steps in Delegating Duties, Training Employees

(Abstract of paper presented at 1957 annual meeting, Texas Hospital Association.)

Delegating of responsibilities is an area of concern for most supervisors. When it becomes necessary, try to follow an approved four-step method:

(1) Explain the task thoroughly—its importance and its purpose. Then ask the worker to explain it to you, so that you know that he knows.

(2) Get the worker's assent that he can do the task.

(3) Agree on a deadline that he can meet and that is acceptable to you.

(4) Follow up on the assignment, and let the worker know that you will assist wherever necessary.

Similar principles apply in training the employee. The first step is to prepare the worker to learn. Have all the necessary tools and materials available, and if possible conduct the training in the area in which the worker will be employed. Then demonstrate the job to the employee. Explain each step, its importance, and its association with other steps. Thirdly, let the worker do the job, correcting him as he goes, until you are convinced that he knows how. Finally, follow up and let the employee know that you will follow up to help him as much as possible.

Good morale is essential so that workers will do their jobs willingly. A few ways to improve morale are:

(1) Let the worker know how he is getting along. Don't confine your appraisal to a quarterly or annual review.

(2) Tell him in advance about changes that will affect him. Give the reasons for each change and the benefits that the worker will derive.

(3) Study the individual abilities of each worker and try to make the best use of them.

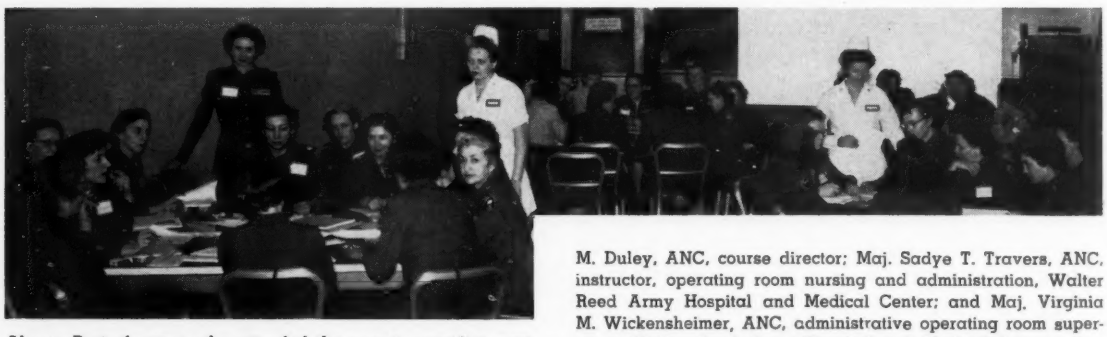
(4) Treat each person fairly with respect to rules and the enforcement of them.—*Charles J. Dolan*, Director, Employee Orientation and Executive Development, Taylor Publishing Co., Dallas.

O. R. Nurses in the News . . .

Members of the operating room nurses' group in Birmingham, Ala., are shown at a recent meeting. First row (l. to r.): Lorene Trevarther, St. Vincent's Hospital; Mary Catherine Davis, Flossie Fortenberry, and Jeanne Swanson, all of West End Baptist Hospital; Faye McCormick, Lloyd Noland Hospital, Fairfield; Minnie McGhee and Lucy O. Cameron, both of University Hospital; Virginia Mullins, Lloyd Noland Hospital; Mary L. Mann, VA Hospital; Betty Anne Jurgensen, St. Vincent's Hospital, and Billie Dean Day, Lloyd Noland Hospital.

Second row (l. to r.): Elwynn S. Hale, Crippled Children's Clinic and Hospital; Mildred P. Christian, Roberta Walden, and Helen Rice, all of University Hospital; Alice Simonetti, Willodine Higgins, Eva R. Tucker, and Frances Wilson, all of Highland Baptist Hospital; Laura P. Tate and Margaret Allen, VA Hospital; Mary Lee Bohanon and Martha Venz, St. Vincent's Hospital.

Third row (l. to r.): Marjorie Kelley Robertson, Crippled Children's Clinic and Hospital; Elizabeth S. Mielke, VA Hospital; Virginia C. Rush, St. Vincent's Hospital; Ruby Roberts, Lloyd Noland Hospital; Nell Dean, Highland Baptist Hospital; Agnes Strickland, Lloyd Noland Hospital; Alice Nadean, Hazel Kent, and Blanche E. Saunders, all of St. Vincent's Hospital.



Above: Part of group who attended the recent operating room nursing institute at the Walter Reed Army Medical Center, Washington, D.C. Student participants included Army nurses on active duty, reserve nurses, Navy and Air Force nurses, and some civilian nurses. Standing (l. to r.) are Maj. Clara M. Duley, ANC, course director; Maj. Sadye T. Travers, ANC, instructor, operating room nursing and administration, Walter Reed Army Hospital and Medical Center; and Maj. Virginia M. Wickensheimer, ANC, administrative operating room supervisor, Walter Reed Army Hospital and Medical Center. One feature of the course was a closed-circuit color television program, produced by the television division, Walter Reed Army Medical Center, under the supervision of the division's executive director, Paul W. Schafer, M.D.

The Greater Akron Association of Operating Room Nurses held its second anniversary meeting recently at St. Thomas Hospital, Akron, O. Included in the area from which the group's membership is drawn, besides Akron, are Barberton, Canton, Massillon, and Ravenna. Officers are Cleo Furry (fourth from the left, front row), St. Thomas Hospital, Akron, vice-president; and (continuing to the right) Carolyn Bishop, Citizens' Hospital, Barberton, president; Mrs. Elizabeth Williman, Children's Hospital, Akron, treasurer; and Joanne Albrecht, Timken-Mercy Hospital, Canton, secretary.

SELECTED BIBLIOGRAPHY

By Dorothy W. Errera, R.N.

Suggestions will be welcomed for subjects to be covered in future issues.—The EDITORS.

Duncan, I.B.R., Collins, A.M., Neelin, E. M., and Roy, T. E.: "Nasal Carriage of Staphylococcus Pyogenes by Student Nurses." *Canad. M.A.J.* 77:1001, Dec. 1, 1957.

The occasional carrier of staphylococci is probably not a source of appreciable contamination of his environment because the staphylococcus is in his nose for such a short period. The single swab survey is not significant because, in the authors' experience, it is only the constant and intermittent carriers who disseminate staphylococci from their nasopharynxes into the environment.

Between 30 and 38 percent of 51 nurses examined over an 18-month period were nasal carriers of staphylococci. The percentage remained fairly constant in relation to status of training—i.e., 36 percent at the beginning of training; 40 percent in the fourth month, and 28 percent in the eighth month.

The changes in percentage of antibiotic-sensitive organisms, however, varied impressively. At the beginning of the survey, 71 percent of the organisms cultured were sensitive to all antibiotics. At the end of 18 months, only 13 percent were sensitive.

Penicillin-resistant strains increased from 29 to 35 percent in 12 months and to 53 percent in 18 months. Penicillin-tetracycline-resistant strains were not found at the beginning of the study, but at the end of 12 months, 41 percent were resistant to this combination; at the end of 18 months, 34 percent were resistant.

The authors wonder whether this high incidence may be due to a particular capacity of this organism to colonize the nasal mucosa or whether it is merely one that nurses are exposed to most frequently.

The accompanying illustration shows graphically the contribution of various hospital departments to the incidence of acquisition. The careful nursing procedures of isolation units apparently limited the degree of acquisition despite the large number of patients with staphylococcus sepsis accommodated in the unit.

McDonald, Sheila, and Timbury, M. C.: "An Unusual Outbreak of Staphylococcal Postoperative Wound Infection." *Lancet* 2:863, Nov. 2, 1957.

In an eight-day period, four patients on a surgical unit with a previously *very low* sepsis rate developed postoperative infections. One had a superficial wound infection present at the time of the first dressing on the seventh postoperative day; the remaining three had deep wound abscesses which discharged between eight and 15 days postoperatively.

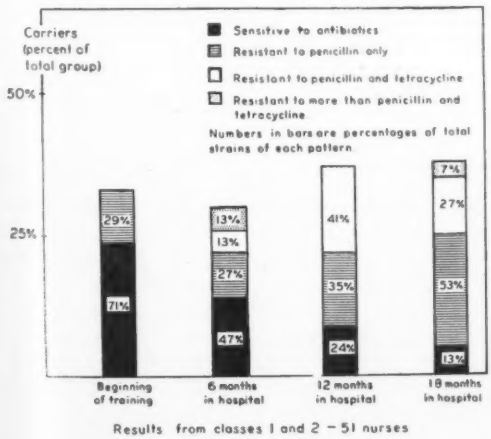
Culture of the pus from these four was positive for a coagulase-positive staphylococcus which had a very unusual and distinctive pigmentation. The same distinctive staphylococcus was found a few days later at autopsy in a patient from the same surgical unit who died of peritonitis.

As the investigators gathered their data, they recalled another patient who had died two weeks previously with a clinical picture similar to that of the patient more recently autopsied. A review of the records showed that the same distinctive staphylococcus had been cultured from his wound shortly before his death.

The site and nature of these infections made acquisition in surgery a strong likelihood, and the surgical records were next scrutinized. All *six* infected patients had been operated on by one surgeon! In 15 days, the surgeon had op-

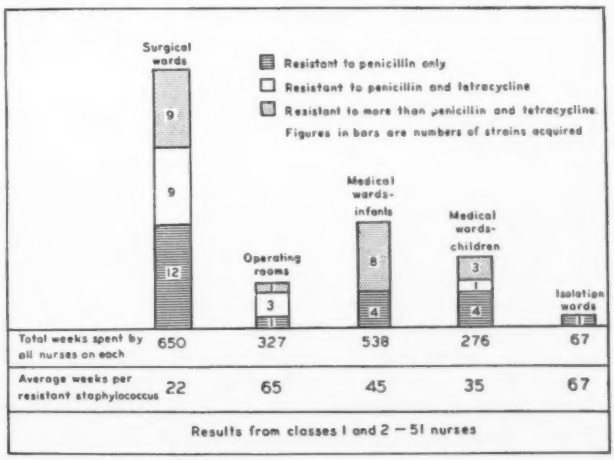
(Continued on page 110)

Incidence of Carriers and Antibiotic Sensitivity of Carried Strains

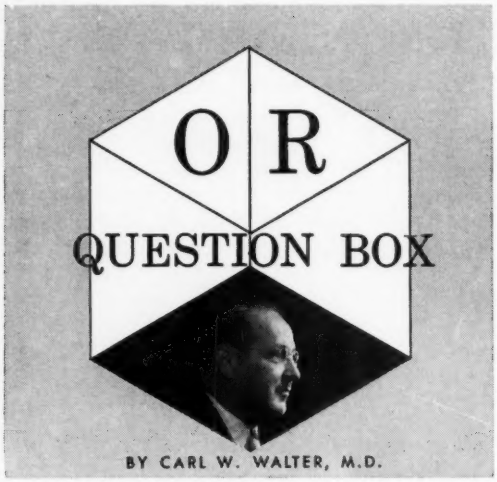


Results from classes 1 and 2 – 51 nurses

Wards Where Nurses Acquired Resistant Staphylococci



Results from classes 1 and 2 – 51 nurses



Assisted by Dorothy W. Errera, R.N.

Q. We are sterilizing suture material on bits of plastic tubing. Do you approve?

A. Suture material must not be sterilized on wood, plastic, or rubber because heat affects the lignum in the wood, polymerizers in plastic, or plasticizers in rubber, and deposits are left on the suture material which are likely to cause reactions in patients.

Q. What are your suggestions for sterilizing wire sutures?

A. The first thing to remember when packaging wire for sterilization is that kinking, folding, and twisting all make an unwieldy mess of useless material. Also, kinks and bends weaken the suture material. Wire can be sterilized on a reel which keeps the strands straight or can be cut into strands and sterilized in glass tubing.

Q. What are your feelings about paper envelopes for sterilizing hypodermic needles?

A. Needles cannot be truly sterilized in any paper wrapper without some provision to prevent penetration of the tip.

Q. Can you think of any reason for suture needles bending and breaking?

A. If the steel used in suture needles is improperly tempered, it will be hard and brittle and the needles will bend and break. Hence, it is important to buy the best grade of needle available, from a reliable manufacturer.

Q. Are telescopic instruments damaged by immersion in quaternary ammonium compounds?

A. When made with distilled water, solutions of quaternary ammonium compounds are safe for disinfection of telescopic instruments. Solutions made with tap water, however, precipitate an alkaline earth film around and on the lens. The disinfecting action of the quaternary ammonium compounds is impaired by the minerals found in natural or hard water. Alcoholic solutions attack the lens cement. These compounds do not kill the tubercle bacillus and cannot be used where contamination with this organism is a likelihood.

Q. Can polyvinyl tubing be steam-sterilized?

A. At temperatures lower than 250° F., polyvinyl tubing can be sterilized several times. If the sterilizer creeps up above this temperature, the material will break down. A type of polyvinyl tubing can be purchased which is specifically intended for steam sterilization.

Q. How long are syringes considered sterile after they have been sterilized unwrapped with plastic tips?

A. Indefinitely if they are kept dry.

Q. Can you tell us why our instruments are rusting even though we are using an anti-rust tablet in our solution?

A. When quaternary ammonium compounds are made with tap water or stored in soft glass bottles, the anti-rust agent is depleted and has no effect as an inhibitor.

Q. Our new knife blades are coming with an oily film. Are these safe to use?

A. The oil is cosmoline and is applied in manufacture to prevent corrosion. Newer supplies of blades are packaged in a corrosion-resisting paper which obviates the use of the oil. More recently, prepackaged, sterile blades have appeared on the market which are ready for immediate use without preliminary cleaning or sterilizing. Your oily blades can be sterilized in dry heat without removing the oil or disinfected in a germicide containing a fat solvent. If an aqueous disinfecting solution is used, the oil must be removed before the blades are immersed.

Q. What solution do you recommend for disinfection of eye instruments?

A. The problem of transmission of homologous serum jaundice is as acute in eye surgery as in any other type of surgery. Hence, instruments contaminated with blood and tissue fluid must be terminally sterilized in heat. Good stainless steel instruments will withstand exposure to heat. Whether steam or dry heat be used, care must be taken to protect the delicate biting and cutting edges from damage. Recently ethylene-oxide sterilizers have been introduced for specifically sterilizing this group of instruments.

Q. Is there any danger of superheating at 270° F.?

A. The temperature rise in the 270° F. high-speed sterilizer is quicker, there is no chance for heat to dissipate, and there is great danger of superheating if textiles are exposed to this temperature. Sterilization at 270° F. should be reserved for instruments, glassware, and other materials for which the element of time is important. There is no point to exposing textiles, suture material, and rubber goods to the destructive action of the added heat.

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(Continued from page 107)

erated on eight patients—six of whom developed active, and, in two instances, fatal infections.

When the surgeon was scrutinized, it was found that he had been operating with a small (½″) furuncle on the ulnar side of his right forearm, somewhat above the area covered by the glove cuff. He had covered the furuncle with a waterproof dressing while it was discharging.

When discovered by the investigators, the lesion was three weeks old, but a growth of coagulase-positive staphylococci was obtained from its surface. The pigmentation of the organisms cultured was identical to that of those cultured from the six infected patients, and the phage type of all was the same—52A-79. This organism had not been isolated from any wound in the previous six months.

Subsequently one house officer developed a boil on his neck while the infected cases were on the ward. Several weeks later, when the problem was apparently under control, six other patients developed superficial wound infections with the same phage type and characteristic organism cultured from the wounds.

It is interesting to note that the occlusive dressing used by the surgeon did not prevent transmission of the organisms from his arm to the patients' wounds. The authors stress the great potential hazard of operating with an infection of the skin of the hands and/or arms, and urge that any surgeon with such an infection postpone surgery until the lesion is completely healed.

Torrey, J. C., and Reese, M. K.: "Initial Aerobic Flora of Newborn (Premature) Infants—Nature, Source and Relation to Ultraviolet Irradiation and Face Masks." *Am. J. Dis. Children* 67:89, Feb. 1944.

Various likely modes of transmission of infection in a nursery were studied and analyzed. From the evidence collected, it appeared that contact transmission from adult to infant through droplets of saliva was the mode of primary importance.

The significance of simple conversation with the speaker wearing a conventional face mask was evaluated. It was apparent that simple conversation was sufficient to project droplets through the usual mask of four layers of 30x40 mesh gauze.

Organisms from the nasopharynxes of nursery personnel were cultured and their identifying characteristics labeled. The first strains of organisms isolated from the nasopharynxes of infants were similarly cultured and identified. In an appreciable number of instances, direct relationship could be found between the infant's organisms and those of a particular nurse or doctor in attendance.

Despite a rigidly enforced "thorough" scrubbing of hands between infants, 17 cultures of the fingers of four nurses revealed *E. Coli* in 10 instances during or after the care of the infant. One nurse in five contacts with different infants showed *E. coli* each time.

Since there was no epidemic of respiratory infection during the time of this study, there was no opportunity to evaluate the effectiveness of the ultraviolet installations. There did not, however, appear to be any delay in the appearance of infections involving the nonhemolytic streptococci in the units with ultraviolet, but there did appear to be some delay in infections with strains of *Staphylococcus aureus*. There was apparently no interference with the person-to-person transmission of organisms through the air within the range of a few feet.

The authors stress careful handwashing and efforts to avoid the contamination of surfaces of bottles, trays, nipples, and other items.

Altemeier, W. A., and Culbertson, W. R.: "The Prevention and Control of Surgical Infections." *Surgical Clin. N. A.*, Dec. 1955.

A good review of the "language of infection," with a comprehensive discussion of kinds, extent, factors in development, bacteria involved, symptoms and treatment.

Mauer, Irving: "Surgical Uses of Saran (Vinylidene Chloride Vinyl Chloride) Co-Polymer Staple Fiber —Preliminary Report." *Military Med.* 120:354, May, 1957.

Mechanics' waste commonly used for pressure packing of wounds has the disadvantage of becoming wet and matting into a plaster or concrete-like substance. A bulky, kinky collection of Saran fibers was tried by the authors as a pressure packing with considerable success. The fibers can be heat-sterilized and are non-wettable, absorbing less than 0.1 percent moisture. They maintain a steady pressure against the wound. Bleeding, when present, appears to be drawn into the fibers by capillary action and absorbed on the outer dressing. There is no matting of the fibers, and the wet outer dressing can be changed without disturbing the wound.

Wounds appear to granulate more rapidly when packed with the material. Granulations were not disturbed by removal of dressings or repacking of wounds. Wounds leaking urine were dressed with the material, and there was a noticeable absence of skin irritation so common to this type of wound. The urine appeared to leak through the Saran, to be absorbed on the outer dressing, and to leave the skin with a minimum of moisture.

The O.R. Problem Clinic

by EDITH DEE HALL, R.N.

• Time limitations made it impossible to answer all audience questions submitted during sessions of the fifth national congress of the Association of Operating Room Nurses in Philadelphia. To answer some of these queries and make the information available also to nurses who were unable to attend the congress, we have invited several program participants to give their opinions in this column.

This month's "guest expert" is Mrs. Doris Deimel, O.R.S., Rockaway Beach (N. Y.) Hospital, who was a member of the problem clinic panel for average and large hospitals at the congress.

Q. Do you think a full schedule should be worked on Saturday?

A. It depends upon the institution. If any schedule is planned, it should be confined to minor surgery. It should be remembered that only a limited number of personnel is on duty over the weekend, throughout the hospital, and adequate care cannot be given if the O.R. schedule is overloaded with elective cases.

Q. Should the O.R. be responsible for exchange transfusions on newborns?

A. Definitely not. These should be done in the nursery. Infants would be subjected to the hazard of infection if taken from the nursery and exposed to other areas of the hospital.

Q. What is the function of the O.R. supervisor in the study and control of infection?

A. The O.R. supervisor should receive from the director of nurses notification of any reported infections. She then checks to see who was on the surgical team for the case and asks about breaks in technic or anything unusual that may have occurred.

In the permanent record book there should be a column for dirty and clean cases. If the case in question was infected to begin with, she has the answer. If not, the check begins at the O.R. table and continues to the patient unit to find out what was observed at the first change of dressing.

To control postoperative infections, we must have full co-operation of the surgeons and the anesthesiologists. This, combined with proper teaching and monthly cultures, will help greatly to achieve control.

Q. With nonprofessional help performing nursing functions in the operating room, do you think the graduate nurse will be content to continue her education only to supervise and teach nonprofessionals?

A. In view of the fact that O.R. experience has been eliminated from the curriculum in collegiate schools with the two-year program and some with the three-year program, I believe that the graduate nurse has an excellent opportunity to teach the young graduate who has not had O.R. experience. Her teaching may include material on the practical technics, principles of teaching, management, and interpersonal relations.

Q. Should the O.R. nurse go to the dining room in her scrub gown?

A. The ideal situation would be to have a dining area in the O.R. suite for doctors, nurses, and other O.R. personnel. If this is not feasible, the accepted technic is to make a complete change of dress, shoes, and cap. This applies to all personnel leaving the suite and planning to return. We all know that the time element plays havoc with this policy.

Q. What record of operations other than the "Operation Record" sheet, which is part of the patient's chart, is required of accredited hospitals?

A. A permanent O.R. record book should be standard equipment in every O.R. It should be kept up to date, and filled in accurately and completely, preferably by some member of the professional staff. It may be referred to in court cases. One of the first requests made by a medical examiner visiting the O.R. is to see this book. It may be purchased at the Physicians' Record Co., 161 West Harrison St., Chicago 5, Ill.

Q. Should the anesthesia or the O.R. personnel position patients for surgery?

A. It should be a co-operative venture to determine and institute the proper position for the operative procedure.

Q. Please give your opinion on who should bring patients to the O.R. suite and who should take them back from the recovery room.

A. The O.R. orderly should go to the patient unit and transport the patient to the O.R., with an R.N.

(Continued on next page)

THREE WAYS TO AUTOCLAVE

The Wrong Way

Use no inside indicator—depend upon pressure gauges, and outside thermometers. (This may be referred to as the *aboriginal* "We hope it's sterile" method.)

The Cheap Way

Use the cheapest inside indicator—you can probably get away with it for a while. (Also referred to as "not quite keeping up to standards" method.)

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in attendance. The unit should be responsible for transporting the patient from the recovery room back to the unit.

Q. What do you do with O.R. personnel when the work load is light?

A. Because the O.R. personnel are always doing overtime for which there is seldom any compensation, some consideration should be given to the staff, in the form of extra time when the work load is light. Free time can always be utilized to rewrite technic and procedure books, bring policy books up to date, and work on the countless small things that never seem to get done.

Q. Do you recommend an instrument count before the patient leaves the O.R.?

A. An instrument count before and after surgery is desirable, but it cannot always conveniently be done. I feel that if the suture nurse keeps her eye on the field there is no danger of an instrument's being lost. The greatest loss is in the laundry and garbage.

Surgery Saves Sword Swallower for New Career

Rattled by his audience, an 18-year-old apprentice sword swallower slipped, and punctured his esophagus with near-fatal consequences.

Swift surgery repaired him, however, to resume a useful life—as a fire-eater.

The case was reported, complete with colored moving pictures, by Philip Thorek, M.D., associate professor of surgery, University of Illinois College of Medicine, Chicago, during the recent congress of the International College of Surgeons in Los Angeles.

The boy made the lethal mistake of trying to force the sword down his throat instead of just letting it slide, Dr. Thorek explained. He perforated his esophagus and almost stabbed himself in the heart.

Later, not realizing what had happened, but feeling bad, the boy tried to perk himself up with large amounts of milk and soft drinks. These flowed through the perforation and into his lungs.

He had almost drowned himself when Dr. Thorek saw him 12 hours later and performed emergency surgery. That was two years ago. The patient made such a complete recovery that he resumed his sideshow career—specializing in fire rather than swords.

New Sanitation Institute Hears Dr. Walter

Carl W. Walter, M.D., associate clinical professor of surgery, Harvard Medical School, Boston, was one of the featured speakers at a meeting April 9, of the newly-formed Institute of Sanitation Management in New York City.

The other principle speaker was Charles F. Kilpatrick, chief, housekeeping section, VA Department of Medicine and Surgery, Washington, D.C.

This session was the first in a series of similar gatherings in major cities throughout the country. Purpose of the meetings is to stimulate greater interest by top management in proper sanitation administration.

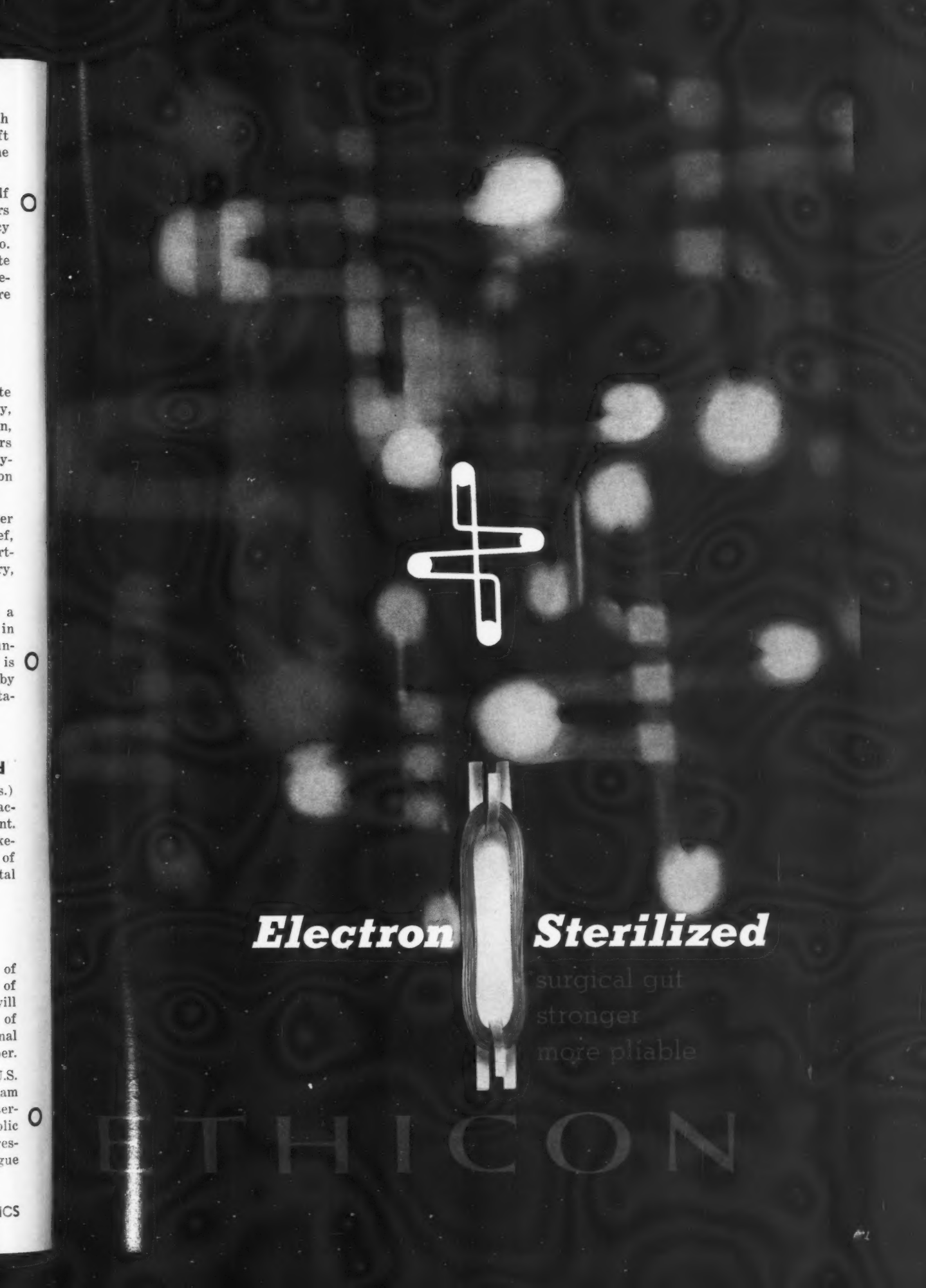
Massachusetts Hospital Name Change Announced

The name of the Melrose (Mass.) Hospital has been changed, according to a recent announcement. New name is the Melrose-Wakefield Hospital, under direction of the Melrose-Wakefield Hospital Association.

NLN Appoints Public Health Nursing Head

Martha D. Adam, R.N., director of public health nursing services of San Mateo, Calif., since 1948, will become director, department of public health nursing, National League for Nursing, in September.

A former consultant to the U.S. Public Health Service, Miss Adam has held positions in nursing service education as well as public health nursing. She is a past president of the California League for Nursing.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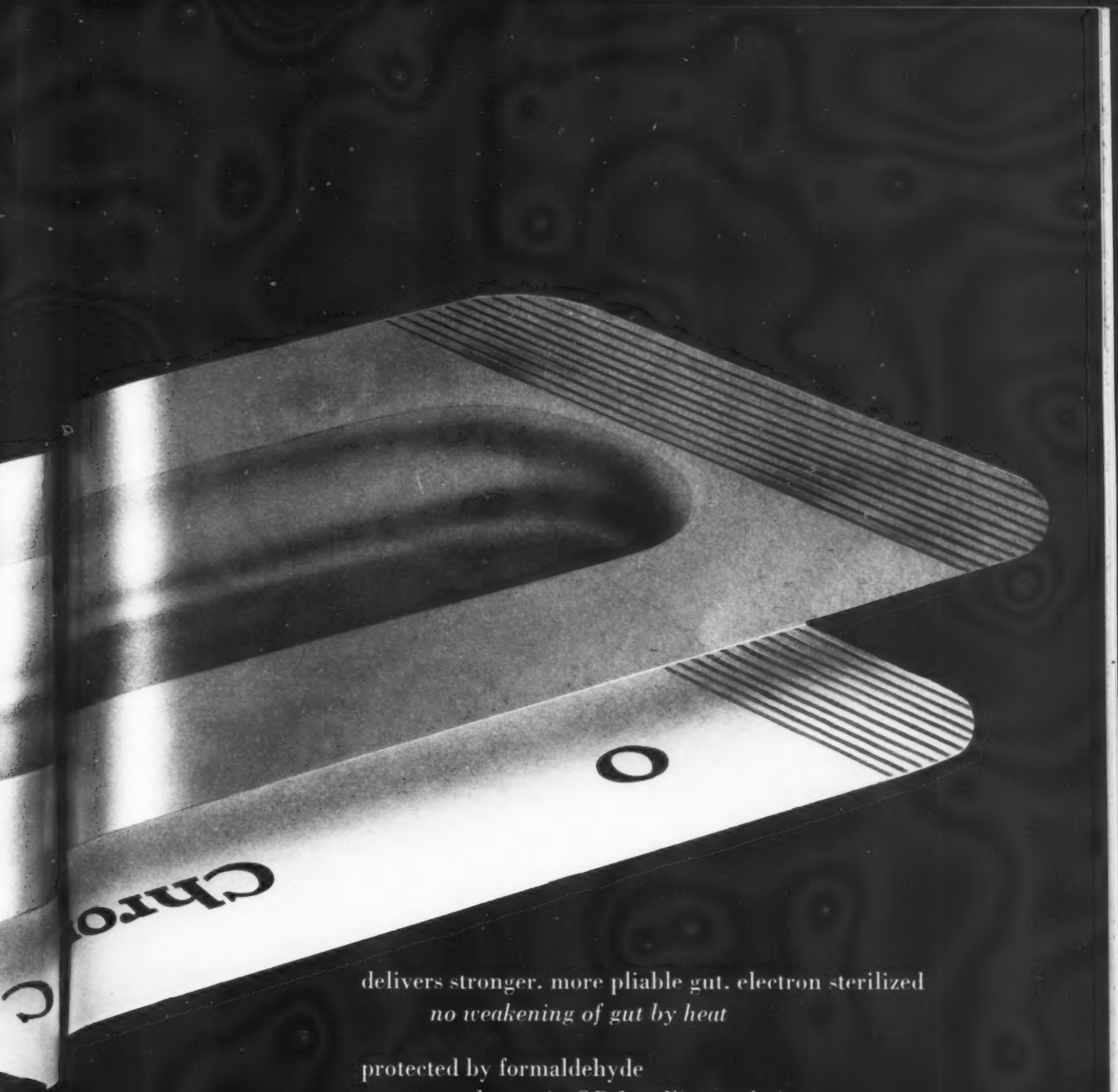

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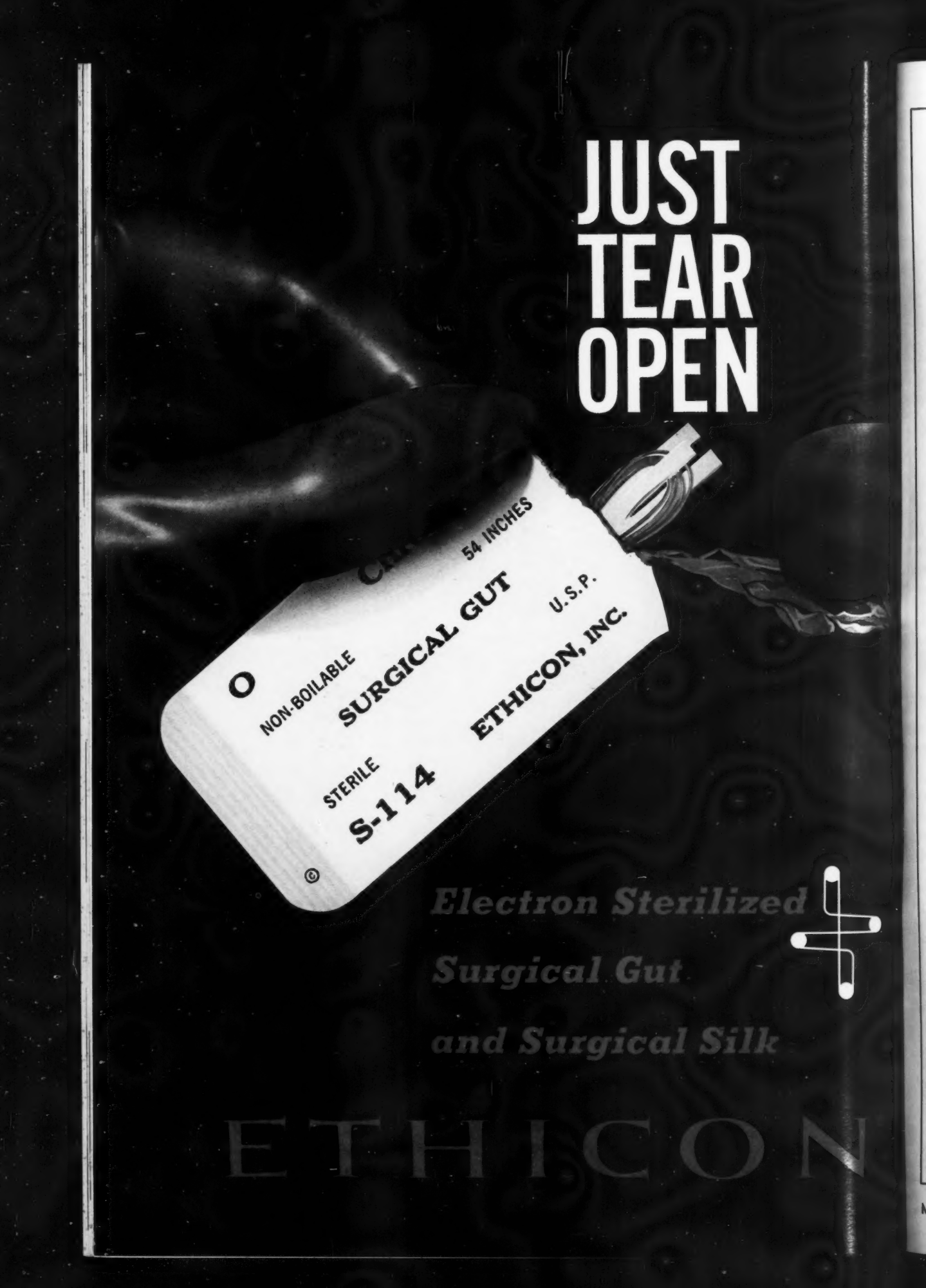
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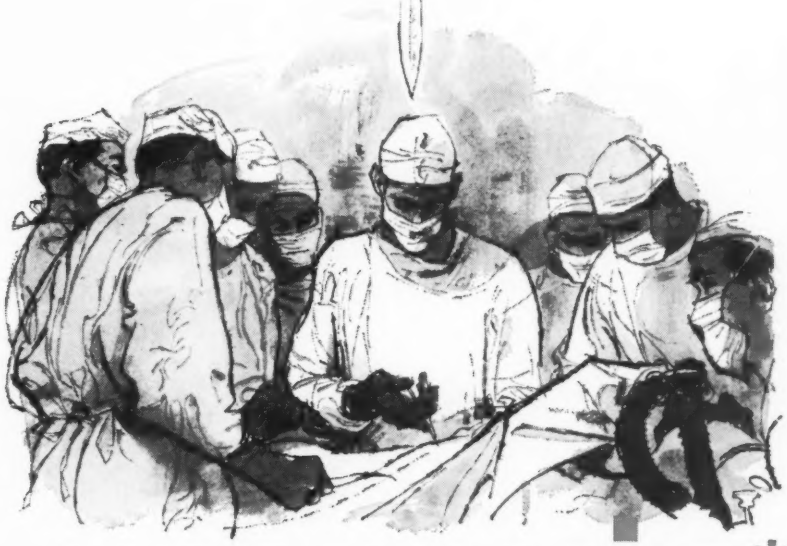

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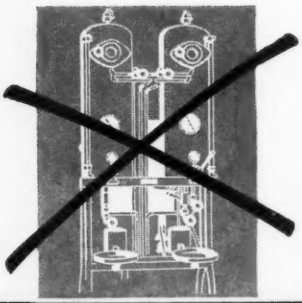

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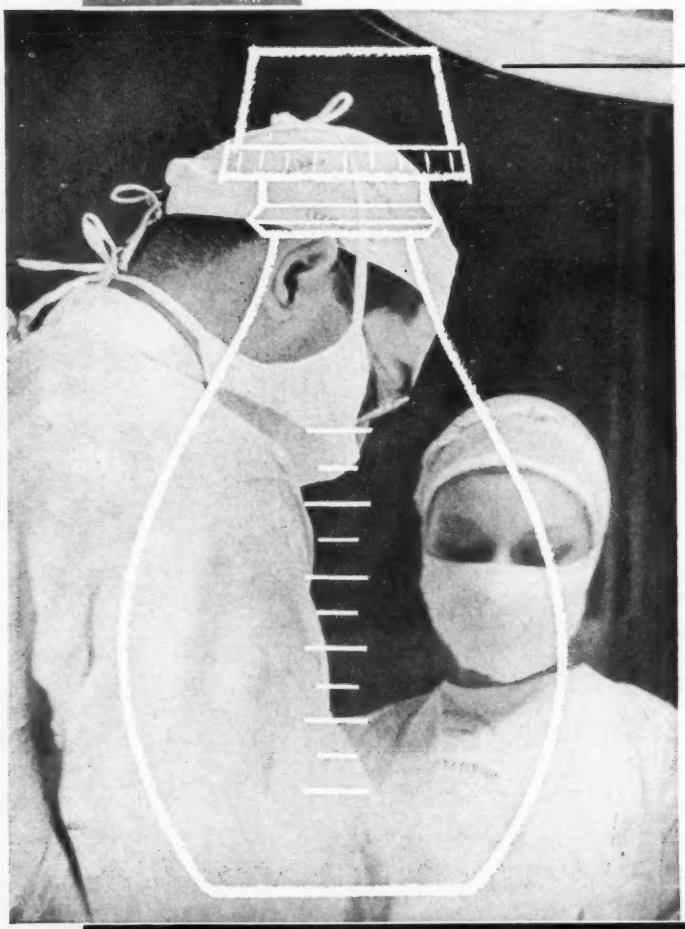

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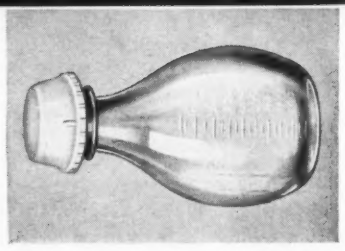

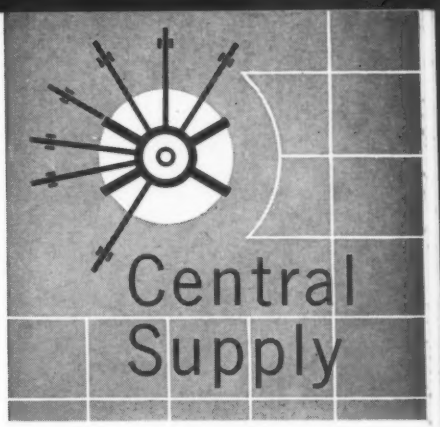

Sterilization by Heat*

By John J. Perkins, M.Sc.**

Principles for effective use of steam and dry heat

• Of the various sterilizing agents at our disposal, that of moist heat in the form of saturated steam under pressure is the most dependable medium known for the destruction of all forms of microbial life. Unlike many of the chemical bactericides in solution form, and other gaseous sterilizing agents, heat leaves no toxic residue on materials following the sterilizing process.

Steam is water vapor. As such, it presents a physical state of water as truly as ice does, but as a gas it may be near or far away from its condensing temperature. When we speak of saturated steam, we mean steam that contains the maximum amount of water vapor or exerts the maximum pressure for water vapor at a given temperature and pressure.

When steam is admitted to a sterilizing chamber, it promptly condenses upon contacting cold objects. As it condenses, it liberates a great amount of latent heat, simultaneously heating and wetting the materials and thereby providing the two requisites for the thermal destruction of microbial life—moisture and heat—which must always be present for effective sterilization.

The process by which bacteria are destroyed when subjected to heat is not clearly understood. The traditional theory is that death at elevated temperatures is closely linked to the alteration of proteins involving some irreversible protoplasmic change within the bacterial cell.

To be sure, it is known that moist heat is a more efficient sterilizing agent than dry heat. When moisture is present, bacteria are destroyed at considerably lower temperatures than when moisture is absent. This phenomenon has been explained on the basis that all chemical reactions, including the coagulation of proteins, are catalyzed by the presence of water.

Briefly, the generally accepted theory is that death by moist heat is caused by the denaturation and coagulation of some essential protein or enzyme-protein system within the bacterial cell, whereas death by dry heat is primarily an oxidation or slow "burning-up" process.

Today, in every modern hospital, there may be found a variety of sterilizers or autoclaves. All are dependent upon the application of certain fundamental principles allied with the use of steam as a sterilizing agent. Steam under pressure is used rather than atmospheric steam for the sole purpose of attaining higher temperatures. Pressure of itself has nothing whatsoever to do with the microbicidal properties of steam. Since atmospheric (nonpressure) steam has a minimum temperature of 212°F., it has no value for the sterilization of surgical supplies.

Boiling water is likewise an inadequate microbicide, and its use should be discouraged wherever steam under pressure is available. Several investigators have shown that heat-resistant bacterial spores will withstand boiling water at 212°F. for many hours of continuous exposure. There is also some question as to the efficiency of boiling water for the inactivation of certain viruses, such as those associated with serum jaundice or infectious hepatitis. It is considered more appropriate to designate the boiling-water process as one of disinfection or sanitization rather than sterilization.

The factors which have established pressure steam as the most reliable medium for the sterilization of surgical supplies are: its power of penetration, its microbicidal efficiency, and the ease of regulating or controlling steam for economical operation.

Saturated steam possesses the singular property of being able to heat materials and permeate porous substances by the rapid process of condensation, as opposed to the very slow process of heat absorption in the case of hot air or any other gas used as the heating medium. Also, saturated steam at a temperature of 250°F., equivalent to 15 pounds pressure, will destroy the most heat-resistant forms of microbial life within a brief interval of exposure.

Bacterial spores are recognized as the most resistant of all living organisms in their capacity to withstand external destructive agents. Anthrax spores, for example, dried on silk threads have

(Continued on next page)

*This article is taken from a lecture given by the author in the Becton, Dickinson lecture series, which was inaugurated last fall at the Seton Hall College of Medicine and Dentistry, Jersey City, N. J., under a grant by Becton, Dickinson and Co.

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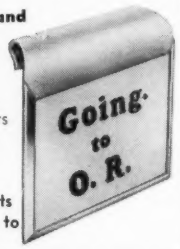

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- ☐ No Visitors for a Few Minutes—Patient Taking Treatment
- ☐ Omit Breakfast
- ☐ Omit Breakfast and Hold Dinner
- ☐ One Visitor at a Time
- ☐ Out of Order
- ☐ Oxygen Being Given
- ☐ Patient Sleeping
- ☐ Precaution
- ☐ Quiet Please
- ☐ Radium
- ☐ Remove Packing
- ☐ Save Specimen
- ☐ Save Stool
- ☐ Save Urine
- ☐ Sips of Water Only—Blood Sugar in A.M.
- ☐ Special Diet
- ☐ Special Tests
- ☐ Sterile
- ☐ Strict Isolation—Gown & Mask
- ☐ Test Urine
- ☐ Transfusion
- ☐ Turn . . . Hour
- ☐ 24 Hr. Urine Specimen
- ☐ Unsterile
- ☐ Urine Specimen
- ☐ Visitors Limited
- ☐ Water Only

SIZE: 4" x 6"

PRICE: $2.16 PER DOZEN ASSORTED

Card Holders	Price per Doz. Lots of 1 Doz.	6 Doz.	12 Doz.
☐ Aluminum for ROUND Bed Rails	8.50	7.85	7.40
☐ Aluminum for SQUARE Bed Rails	8.50	7.85	7.40
☐ Stainless Steel for ROUND Bed Rails	9.70	—	—
☐ Stainless Steel for SQUARE Bed Rails	10.75	—	—

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been found viable after 60 years. Other viable spore-formers have been recovered from canned and hermetically sealed meat after a lapse of 115 years.

The magnitude of resistance to saturated steam is illustrated by the fact that certain spore cultures will withstand a temperature of 240°F. (115°C.) for more than three hours, whereas the vegetative forms of most bacteria are killed in a few minutes at temperatures ranging from 130° to 150°F.

Most authorities concur that no living thing can survive 10-15 minutes of direct exposure to saturated steam at 250°F. To my knowledge, none of the pathogenic organisms has been shown to be resistant to an exposure of even three minutes at 250°F.

To clearly define minimum standards of time and temperature for sterilization of the many kinds of hospital supplies is difficult. Unless this relationship can be stated positively, it is useless to attempt to discuss the subject intelligently or to make specific recommendations on the preparation and sterilization of the various items. Much of the information written on this subject is vague or inconclusive, or avoids the issue entirely.

Any exposure period that is selective in its lethality to microorganisms is not in keeping with the concept of absolute sterility —the goal of all surgical sterilization. It should be expedient always to prescribe a performance which carries a reasonable factor of safety in terms of time and temperature, based upon reliable experimental data relating to the destruction of the pathogenic spores, but also great enough to provide for the destruction of the still more resistant nonpathogenic spore-bearing organisms.

Carefully conducted studies strengthened by broad experience have shown that a minimum standard of time and temperature substantially greater or less than 12 minutes at 250°F. is either incompatible with modern sterilizer design (in which maximum operating pressure of the sterilizer is rated at 20 pounds per square inch), unnecessarily destructive of materials, or unsafe from the standpoint of effective sterilization.

This time and temperature standard of 12 minutes at 250°F. should not be interpreted as denoting a prescribed period of exposure for sterilization of the various articles. Rather, it indicates a minimum time-temperature relationship to be maintained throughout all portions of a load in order to accomplish effective sterilization. It does not take into account the additional time factor required for steam penetration of porous supplies or the rate of heat transfer through solution containers.

Since the order of death in a given bacterial population subjected to a sterilizing influence is governed by definite laws, it follows that if the temperature is increased the time may be decreased. Hence, the time-temperature relationship of 12 minutes at 250°F. has the following equivalents in terms of sterilizing efficiency:

2 minutes at 270°F.
8 minutes at 257°F.
18 minutes at 245°F.

In the interest of standardization, there is little justification for maintaining steam temperatures higher than 250°-254°F., equivalent to 15-17 pounds pressure, because sterilization occurs within a practical period of time at this range.

LIMITATIONS OF STEAM

Despite the outstanding advantages which characterize saturated steam as the ideal sterilizing agent, there are also certain limitations which decrease or may even nullify its effectiveness. Incomplete air elimination from the sterilizer is the most serious factor commonly encountered. Everyone concerned with the operation of sterilizers should understand that air-steam mixtures do not develop the temperatures characteristic of pure saturated steam under the same pressure. Hence, when air is present in the steri-

lizer, the killing power is diminished in direct proportion to the amount of air present.

It should also be recognized that steam is not suitable for the sterilization of such substances as anhydrous oils, greases, and powders. Because of their physical characteristics, such materials are not easily permeated with steam, and sterilization must, therefore, be accomplished by means of dry heat in the hot-air oven at a temperature of 320°F. for one hour or longer.

This subject of dry-heat sterilization is rather poorly understood in hospitals, although laboratories especially have employed the process for many years. In my opinion, the most efficient equipment for dry-heat sterilization is the mechanical convection hot-air oven, equipped with a blower for forced-air circulation. In addition, an efficient hot-air sterilizer should have performance characteristics as follows:

Power consumption — approximately 520 watts per cubic foot of chamber space.

Come-up time to 320°F. in chamber — no longer than 30 minutes.

Maximum deviation of temperature throughout chamber — ±2° F.

Many hospitals today are using the autoclave, with steam to the jacket only, as a substitute for the hot-air sterilizer. This procedure can be employed on a temporary basis, but it is not as reliable as the utilization of a properly designed hot-air sterilizer. Using the autoclave as a dry-heat sterilizer makes for a lengthy and inaccurate procedure, because the maximum temperature that can be attained in the chamber is 250°F. The exposure period required for sterilization at this temperature is a minimum of six hours, preferably overnight.

Furthermore, the thermometer regularly furnished on the autoclave does not function when steam is applied to the jacket only. Thus, there is no convenient means of indicating and recording the true temperature in the chamber.

Figure 1 shows the recommended time-temperature ratios for the sterilization of those supplies which can be sterilized best by means of dry heat.

—IMPORTANCE OF PACKAGING

Of the various factors which govern steam sterilization of surgical supplies, that of "packaging" is of prime importance. Operators should bear in mind that safe performance demands complete permeation of every strand and fiber of the material with the moisture and heat of the steam. The first requisite is, therefore, to restrict the size and density of the individual pack so that 30 minutes at 250° F. will insure uniform steam penetration with a liberal margin of safety in sterilization.

Figures 2 and 3 (page 118) demonstrate what *not* to do in the preparation of surgical packs.

The practice of using large dense bundles involves definite hazards. The largest packs should not exceed 12x12x20" in size for routine work. If packs with greater dimensions are required, the exposure periods must be prolonged to 40-60 minutes, with the likelihood of premature disintegration of the outer fabrics, as the result of overexposure.

Figure 4 (page 119) shows a pack arranged for muslin wrapping which is suggested as a model for all heavy packs. The alternate layers are crossed to promote free circulation of steam through the mass. Also, the lighter materials are located near the center of the pack. Packs prepared in this manner may be sterilized with an ample margin of safety in 30 min-

(Continued on next page)

Figure 1

SUMMARY OF REQUIREMENTS FOR HOT AIR STERILIZATION OF SUPPLIES

Material	*Exposure Period From Time Sterilizer Shows Temperature of—*			*Quantity and Preparation*
	340°F. (170°C.)	*320°F. (160°C.)*	*285°F. (140°C.)*	
Glassware		60 minutes		Items must be clean and free from oil or grease.
Glycerine	60 minutes	120 minutes		Quantity should be limited to ¼" layer (approx. 1 oz.) in 200 ml. Erlenmeyer flask.
Instruments (Cutting Edge)		60 minutes		Instruments must be clean, free from oil or grease and placed on metal tray in sterilizer.
Needles (Hypodermic)		120 minutes		Needles may be placed in tubes having restricted sides, with cotton stoppers. Wire mesh baskets serve well as containers for tubes. Remove stylets.
Needles (Suture)		60 minutes		Sew needles into gauze pack, wrap in muslin.
Oils	60 minutes	120 minutes		Quantity should be limited to ¼" layer (approx. 1 oz.) in 200 ml. Erlenmeyer flask or similar container.
Petrolatum—Liquid	60 minutes	120 minutes		Same as for Oils.
Petroleum Jelly (Vaseline)	60 minutes	120 minutes		Quantity should be limited to ¼" layer (approx. 1 oz.) in Petri dish, ointment jar or other similar container.
Petroleum Jelly (Vaseline) Gauze		150 minutes		Quantity should be limited to 20 strips of 2" x 8" gauze and no more than 4-oz. Petroleum Jelly in catheter tray with dimensions of 2½" x 8" x 1¾".
Powders	60 minutes	120 minutes		Quantity should be limited to ¼" layer (approx. 1 oz.) in Petri dish or other container.
Sulfonamide Powders			3 hours	Quantity should be limited to 4-5 gm. in double envelopes or cotton-plugged test tube.
Syringes (in Test Tubes)		75 minutes		Place assembled syringe with needle attached in test tube of suitable size. Cover top of tube with muslin.
Syringes (Wrapped)		60 minutes		Remove plunger from barrel and wrap in muslin. The needle embedded in gauze may be included in pack.
Zinc Peroxide			4 hours	For clinical application, quantity should be limited to 15-20 gm. in suitable container.

utes at 250° F. and dried out after sterilization in approximately 15 minutes.

PROTECTIVE WRAPPERS

Today, many hospitals are using various materials as substitutes for muslin in the wrapping of supplies. Some of these materials are satisfactory; others definitely are not. One should bear in mind that any protective cover or wrapper for surgical supplies must provide protection against contact contamination in handling and must also serve as an effective dust filter. Double-thickness muslin fulfills the requirement ideally. It possesses good filtering characteristics and does not inhibit or retard appreciably the passage of steam to the contents of the package during sterilization.

Canvas covers should never be used because the tightly woven fabric seriously retards the passage of steam and interferes with sterilization. Cellophane is also unsatisfactory because it is impervious to steam.

Articles such as catheters can be processed satisfactorily in cellophane tubing if the catheter is rinsed with water just before packaging, or if one end of the tubing is left open for release of air and admission of steam during the sterilizing process.

As a substitute for muslin, certain hospitals are using the vegetable parchment paper known as "Patapar" 27-2T. Our tests on this product have indicated that it does permit passage of steam at a useful rate, and from bacteriological studies one may conclude that it is safe to use. However, it is advisable to allow a somewhat longer period following sterilization for drying of materials wrapped in Patapar, because the rate at which water vapor passes through it is much slower than that of muslin.

Some hospitals are using a 30 or 40-pound Kraft paper for wrapping gloves and other supplies. Commercial paper glove wrappers are also available, but their design or fabrication is not always as good as it should be.

My objection to the use of paper is that one never knows when it may develop holes or cracks not grossly visible, but still large enough to permit contamination to gain access to the interior of the package. The repeated use of paper wrappers is certainly not good practice. In contrast, double-thickness muslin, with thread count of 140, retains its characteristics for a long period of time. It is probably the safest material that can be used for wrapping surgical supplies. Certain grades of twill are also satisfactory.

Anyone who anticipates substituting paper for muslin as a wrapping material should obtain information beforehand on the steam and air-transmission characteristics as well as the economic virtues of the product from the supplier. At present there is insufficient evidence to warrant the use of paper as a substitute for muslin, especially for the wrapping of supplies destined for the operating room.

LOADING THE STERILIZER

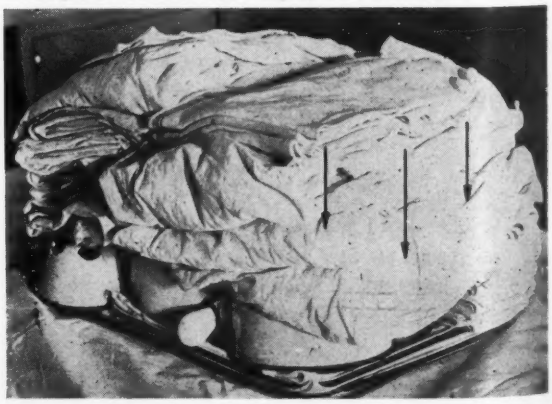
The fundamental rule in loading the sterilizer is to prepare all packs and arrange the load in such a manner as to present the least possible resistance to the passage of steam through the load from the top of the chamber toward the bottom. Articles such as sheets, table covers, and towels must be arranged in the sterilizer so that they rest on edge rather than flat side up, in order to permit prompt and complete permeation of the materials with the moisture and heat of the steam.

Figure 5 shows an excellent example of how to arrange the load for a moderate-size sterilizer. The load has been laid out on a table top just as it is to be located in the sterilizer. All packs are resting on edge, in loose contact with each other. The upper layer is placed crosswise of the lower layer. This is recommended for routine practice in order to promote free circulation of steam throughout all portions of the load.

All jars, test tubes, and other nonporous containers for dry materials should be loaded in the sterilizer so as to provide a horizontal path for the escape of air. Figure 6 shows the correct and incorrect way to place jars of dressings in the sterilizer.

Figure 2 (below, left). The practice of using large and heavy packs should be discouraged.

Figure 3 (right). An example of faulty arrangement of the individual pack. The inclusion of basins with fabrics in one package should not be permitted. The basins seriously interfere with steam permeation and retard drying after sterilization.



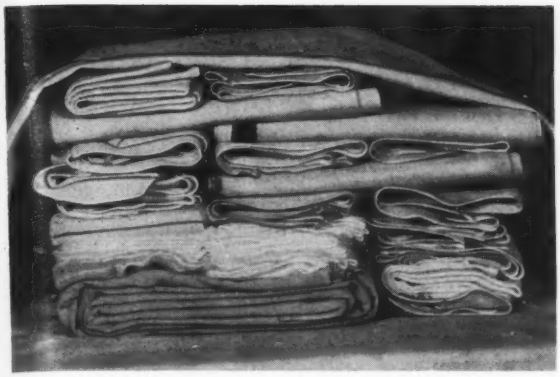


Figure 4 (above, left). This major pack arranged for muslin wrapping is suggested as a model for all heavy packs. Alternate layers are crossed to promote steam permeation. The table drape is folded once and spread out to form ultimately an inner covering of the pack. This provides a convenient method of draping the table as the pack is opened. After the pack has been covered with the table drape, an outer double-thickness muslin cover is put on and held in place with cord.

Figure 5 (right). A good example of proper arrangement of the load for a moderate-size sterilizer. All packs rest on their sides in close contact with each other. This arrangement promotes rapid steam permeation. The upper layer of packs should be placed crosswise of the lower layer as shown.

The same conditions apply to the use of multiple syringe holders or containers.

—PREPARATION OF CATHETERS

Catheters should be cleansed with an alkali detergent such as tri-sodium phosphate, Oakite, Pyrem, or Detergicide, and rinsed copiously with water immediately prior to sterilization. In this way the rubber is hydrated prior to sterilization, and then when saturated steam contacts it, superheating does not occur. A dry catheter will be deteriorated by contact with steam largely because of such superheating. Contact with the various quaternary ammonium compounds and synthetic detergents causes rubber to become tacky and markedly decreases its resistance to steam sterilization.

Catheters should be sterilized at 250° F. saturated steam for 15 minutes.

One should avoid all contact of catheters with mineral or vegetable oils, phenols, and cresols such as Lysol, because these substances cause tackiness and early disintegration.

——DURATION OF STERILITY

How long wrapped supplies may be considered to remain sterile in so-called clean, vermin-free storage is a question that is frequently asked by operating-room and central-service supervisors. The data reported on this subject in the literature is indeed scanty. By and large, protection against contamination of wrapped supplies is dependent upon the porosity of the protective cover or wrapper.

Sooner or later, depending upon the kind and extent of contaminating influence present in the storage area, changes in atmospheric conditions surrounding the packages and handling the packages, there is the possibility of microbial contamination gaining access to the interior of the packages. The most serious contamination hazard is that from insects and vermin (ants, roaches, and silverfish) which may gain access to the interior of a package through folds of the wrapper.

Some time ago tests were made to determine the effectiveness of double muslin covers in protecting sterile supplies from contamination in routine storage and handling. It was found that packs protected by muslin remained sterile on the supply shelves for three weeks.

More recent data indicates that supplies packaged in either muslin or paper bags remain sterile for at least four weeks. For periods of storage longer than four weeks, it is doubtful that either muslin or paper can be depended upon—primarily because of the accumulation of dust particles on the wrapper which makes it difficult to open the package without transferring these dust particles to the contents.

Certainly there is no need to resterilize supplies at the end of one week or even two weeks' storage.

——FACTORS IN FAILURES

Sterilization failures occur in many hospitals, even though per-

(Continued on next page)

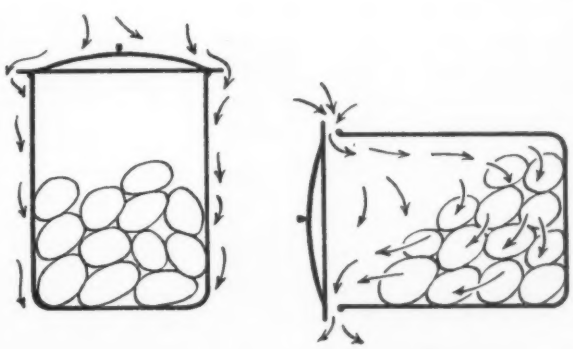


Figure 6. The incorrect and correct way to place metal jars or cans containing dressings in the sterilizer. If jar or can is rightside up, even with cover removed, air is trapped in container. When it rests on its side, with cover held loosely in place, air will drain out and steam will promptly take its place, as indicated by the arrows.

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sonnel charged with the responsibility of sterilization have instructions for the correct preparation and sterilization of supplies. As a rule, surgeons recognize that all instruments and supplies used in the performance of an operation constitute a potentially major source of contamination for operative wounds. Therefore, each supervisor should be cognizant of the various factors which contribute to human error in sterilizer operation. Those of primary importance are:

(a) Failure to observe and understand the regulation of the sterilizer so as to maintain a saturated steam temperature of 250°-254° F., equivalent to 15-17 pounds pressure.

(b) Incorrect methods of packaging and wrapping of supplies, with little or no regard for the size and density of the individual packs.

(c) Carelessness in loading the sterilizer, with disregard for the necessity of providing for complete air removal and for free circulation of steam throughout the load.

(d) Failure to time correctly the proper period of exposure—usually due to ignorance or negligence on the part of the operator.

(e) Failure to carry out the correct sequence of operations in the sterilizing cycle, as the result of carelessness, fatigue, or distraction.

(f) Attempts to sterilize materials which are impervious to steam, such as talcum powder and petrolatum.

(g) Attempts to short-cut established methods of sterilization on the basis of limited bacteriological tests with organisms of unknown heat resistance.

STERILIZATION CONTROLS

The recording thermometer should be regarded as standard equipment on every sterilizer, not a luxury item. When properly installed and used, it is a practical detector of faulty sterilization. It indicates and records the same temperature as that shown by the indicating thermometer located in the discharge line of the sterilizer. It also records the duration of each exposure. Lacking the recorder, the operator can, and frequently does, forget to time the exposure when the temperature has advanced to 250° F. as prescribed.

Unless the sterilizer is equipped with a recording thermometer, it is difficult to maintain the required uniformity if several individuals have access to the sterilizer, or to prove what has or has not been done in routine practices. With use of a recording thermometer, if the exposure periods are greater or less than prescribed, or if the temperature has not been maintained within proper limitations, there is a positive record of the errors, which provides the evidence needed upon which to act in correcting discrepancies. The ability to prove with daily chart records that definite standards of time and temperature are being maintained should appeal to those who must shoulder the responsibility for sterilization.

Sterilization indicators have long been a controversial issue. Authoritative opinion is fairly uniform on the actual worth of all sterilization controls or indicators of the "telltale" variety. At best, their actual worth is questionable. They do tell you that a load has passed through a sterilizer.

It is my belief based upon observations and tests over the past 10 years that all sterilization indicators possess the same general disadvantage, to a greater or lesser degree; a percentage will react to a time-temperature ratio inadequate for sterilization, or will have end points which are not clear enough to permit accurate interpretation of the results. Furthermore, the commercial sterilizer controls do not indicate the actual build-up of temperature in the test pack, nor how much overexposure may have taken place.

Manufacturers of such controls have not seriously attempted to bring about uniformity or standardization of end points to con-

(Continued on page 127)

TRADE TOPICS . . .

NCG Directors Change Name to Chemetron

Directors of the National Cylinder Gas Co. have voted to change the company's name to "Chemetron Corp." They are asking stockholders to approve the change at the annual meeting May 6.

Addition of new product lines and services has made the original name "too restrictive," according to President Charles J. Haines. The new name is made up of parts of the names of three of the major industries served by the company —chemicals, metals, and electronics.

The company has seven divisions. When the new corporate name becomes official, the division dealing with industrial and medical gases and equipment—recently named the NCG division —will be called the National Cylinder Gas division.

Laundry managers and maintenance engineers, attending the plant and maintenance section meeting at the Ohio Hospital Association's March meeting in Cincinnati, enjoyed a special luncheon given in their honor by the American Laundry Machinery Co. Accompanied by Everett W. Hall, laundry manager, Christ Hospital, Cincinnati, and Cincinnati co-ordinator of the section, the group took a guided tour of the laundry machinery company's Cincinnati plant and general offices. Later they viewed the company's motion picture, "Within These Doors," depicting the importance of the hospital laundry to proper functioning of each department of the modern hospital.

Irwin, Neisler & Co. Appoints Sales Manager

Max A. Ferm has joined Irwin Neisler & Co. as sales promotion manager.

Mr. Ferm entered the pharmaceutical field as a technical representative for Ives-Cameron Co. Later he joined Revlon, Inc., where he was in charge of coordinating the pharmacal division's ethical promotion activities.

Ritter Announces Sales Team Changes

The Ritter Co. has announced the reorganization of its dealer distribution structure and home office sales management team.

The reorganization is the result of an expansion program which involved the acquisition of the Liebel-Flarsheim Co., Cincinnati, Ohio.

J. C. Marsh, former sales manager, Liebel-Flarsheim Co., is now sales manager, Ritter medical-hospital division. C. G. Sanderson is manager of special services; Clarence Maxson is office manager, and J. Thomas Johnson is manager, Liebel-Flarsheim sales and service, it was announced by Adrian Comper, director, medical-hospital division.

Firms Undertake Cancer Research for Government

Merck & Co., Inc., and Schering Corp. have each contracted with the National Institutes of Health to carry out cancer research projects.

Merck contracts for the first year total $775,000. The Schering contract is for $240,000. The contracts are part of the Institutes' program for discovery of anti-cancer agents. The program is under the guidance of the Cancer Chemotherapy National Service Center.

The larger of the two Merck research projects will be in the field of biological research. The second project will establish a preparations laboratory to supply commercially unavailable compounds needed for extending cancer research.

The Schering project will test chemicals and antibiotic culture filtrates for anti-cancer activities and will also investigate newer methods of screening compounds.

Industrial Chemicals Co. Names Production Head

Paul J. La Marche has been appointed director of production for U.S. Industrial Chemicals Co., division of National Distillers and Chemical Corp.

Mr. La Marche was works manager for the Premier Mill Corp. prior to joining National Distillers in 1949. Since 1951, he has been manager of the company's Ashtabula, O., plants.

(Continued on next page)

Schueler & Co. Names Sales Coordinator

Schueler & Co., New York, announces the appointment of Eric O. Luria to the position of sales coordinator.

In addition to this post, Mr. Luria will also head Schueler's scientific division, working with clinical and analytical laboratory instrumentation.

Diversey Corp. Opens New Canadian Plant

A new, $750,000 plant was recently opened in Clarkson, Ont., Canada, by the Diversey Corp. It will be the headquarters of the Diversey Corp. of Canada, Ltd., providing manufacturing, warehousing, laboratory, and general office space.

The new structure is the largest in the Diversey chain outside the U.S. It represents the third major addition to the company's international expansion in the past four months. The firm has seven plants in the U.S.

American Can Co. Elects Vice-President

Roy J. Sund has been elected a vice-president of American Can Co.

He was previously executive vice-president of Marathon Corp. Since the merger of that firm with American Can Co., Mr. Sund has been in charge of operations of the Marathon division, and will combine this function with his new post.

Exhibit Citation Awarded To Shampaine Co.

A citation from the U. S. Department of Commerce was recently awarded to the Shampaine Co. for its contribution to U. S. exhibits at the 1957 International Trade Fairs.

The company exhibited an S-1502 major operating table, and a room of stainless steel operating room furniture at two 1956 fairs and at the 1957 Paris Trade Show and the Tunis Show in North Africa.

Plans call for the exhibit to be shown this year at Casablanca and Zagreb.

Potlatch Forests Organizes Paper Cup Division

Potlatch Forests, Inc., has organized a paper cup division with general sales offices in Upper Montclair, N. J.

Robert H. Lathrop has been appointed general sales manager of the new division.

Mr. Lathrop was formerly with the paper container division, Continental Can Co., and the Dixie Cup Co.

Schering Corp. Selects Distinguished Division Head

Schering Corp. has named Franklin K. Johnson, San Francisco, as distinguished division manager for 1957.

Mr. Johnson, a member of Schering Corp. since 1939, will receive the distinguished field manager award plaque of the National Sales Executives Club.

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Edward D. Gudebrod Dies

Edward D. Gudebrod, 82, chairman of the board, Gudebrod Bros. Silk Co., Inc., died March 26.

Mr. Gudebrod joined the company in 1898 and succeeded to the presidency in 1945. In 1957, he became chairman of the board, in which post he guided the $200,000 modernization program begun at the Pottstown, Pa., plant of the firm in 1957.

Pfizer Grants in 1957 Near $1.4 Million

Research and educational grants totaling nearly $1.4 million were made in the United States in 1957 by Chas. Pfizer & Co., Inc., and the Pfizer Foundation.

Of the total, about $500,000 was given to support field research, university and institution laboratory programs, and graduate fellowships. Students, resident physicians, and pharmacy interns received $143,000 through their individual institutions for aid in completing their education.

Pfizer granted $525,000 for consultantships, and for services by outside research workers and organizations to company scientists and laboratories.

Contributions made by the Pfizer Foundation totaled nearly $200,000. Among the recipients were health organizations and national groups which support medical and pharmacy education.

Becton, Dickinson Names Canadian President

John M. Gross has been elected president of Becton, Dickinson & Co., Canada, Ltd. He has been serving both as general manager and as a director of the firm.

Mr. Gross joined B-D when the Canadian subsidiary was established in 1951. Initially he was sales manager, surgical hospital division. In 1954 he became sales manager for all divisions, prior to becoming general manager in 1956.

Dictograph Names V.-P, Market Head

William N. Brown has joined Dictograph Products, Inc., as vice-president in charge of marketing.

Mr. Brown was previously vice-president, Zenith Radio Corp., where he served as general manager of the hearing aid division.

Baltimore Biological Fills Two Executive Posts

Mr. Starling

Mr. Lucker

Thomas W. Starling and Jerome R. Lucker have been named to new sales posts by Baltimore Biological Laboratory.

Mr. Starling has been appointed general manager, and Mr. Lucker,

(Continued on next page)

SPEAKING OF BOTTLES, AREN'T THESE THE HANDIEST EVER? GRADUATIONS ON BOTH LABEL AND BOTTLE MAKE IT EASY TO CHECK FLUID LEVELS FROM ANY ANGLE.
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field sales manager for laboratory sales.

Mr. Starling has served in various sales capacities for 13 years with Becton, Dickinson & Co., parent company of Baltimore Biological Laboratory, and Mr. Lucker has been northeastern technical representative for the companies for 10 years.

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All inquiries are strictly confidential.

New Manager Named by G. H. Wood & Co.

L. Marsh Reese has been appointed regional general manager for the Canadian Eastern division, G. H. Wood & Co., Ltd., Canada.

Mr. Reese, who will continue to make Montreal his headquarters, will be responsible for the company's eastern branches and warehouses. Woodlets, Inc. is the firm's American subsidiary.

Mead Johnson & Co. Has New Trademark

Mead Johnson & Co. has introduced a new trademark as the focal point of a comprehensive new corporate identity program.

The mark is a flame in a square, and will be used on all literature, stationery, advertising and packaging, as well as on all buildings and vehicles. It is designed to symbolize progress in a framework of stability and dependable service.

The company has also announced plans for construction of a multi-million dollar research and industrial park for future expansion

It will be located about 12 miles west of Evansville, Ind., and called Mead Johnson Park. It will consist of one group of research and administration buildings and a second group of manufacturing and shipping-warehouse buildings.

The project is expected to be completed in five to 15 years.

St. Charles Cabinet Creates New Service Post

C. M. Jewett has been appointed to the new post of direct institutional representative by the St. Charles Cabinet Mfg. Co. The new position is designed to provide planning and problem-solving service.

Mr. Jewett will concentrate on counseling and servicing institutional needs in the western states.

Norvel Laboratories Names Sales Manager

C. J. von Schilgen has been appointed sales manager, Norvel Laboratories.

He will direct an expansion program in sales of Norvel products to industries and hospitals.

Mr. von Schilgen was formerly an Eastern sales representative for the gelatin products division, R. P. Scherer Corp.

McCormick Names Institutional Division Head

Edward J. Vinnicombe, Jr., has been named vice-president in charge of the institutional division, McCormick & Co.

Mr. Vinnicombe has been general manager of the institutional division since it was organized in June, 1956, to serve bulk users of the company's spice and extract products. He becomes the firm's first vice-president to direct this phase of operations.

Immediate treatment of

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Hemophilic bleeding calls for *emergency* treatment. There is no time to lose. Hyland Antihemophilic Plasma answers this need as no other product can.

This specially processed plasma is ready to administer in a matter of moments—requires no crossmatching, no thawing or other frustrating delays. It contains clotting components which the hemophiliac lacks and needs, components which are rapidly lost in stored whole blood. Its proved stability now permits 5 year dating.

When smaller volume dosage is desired, plasma may be reconstituted to less than original volume.

Hyland Antihemophilic Plasma is irradiated, dried, and supplied with diluent. In 3 sizes: 50 cc. with built-in filter for syringe administration; 100 and 250 cc., each with complete plasma administration set, including small-gauge I.V. needle to minimize vein trauma.

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clinical notes

Dextran Solutions Found To Prolong Bleeding Time

Infusion of 1,000 ml. of a six percent dextran solution produces prolonged bleeding time in normal adults, state Langdell, Adelson, Furth, and Crosby in the *Journal of the A.M.A.* 166:346-51 (January 25, 1958).

In a study of 257 normal adults, given such infusions, the bleeding time was measurably prolonged in 42 percent. In eight percent of the subjects, the bleeding time exceeded 30 minutes.

Maximum effect occurred three to nine hours after the infusion. Dextran solutions with the highest molecular weights had the most marked effect.

Use of dextran solutions as plasma volume expanders, the authors conclude, is contraindicated in patients who have a known tendency to bleed, or those who have received large transfusions of whole blood.

Cross-Infection Controlled With Routine Handwashing

Establishing a routine handwashing technic utilizing a liquid cleansing detergent* proved effective in controlling spread of infection among patients with communicable diseases, writes Benson in the *American Journal of Nursing* (September, 1957).

Miss Benson, who is chief, Infectious and Parasitic Disease Nursing Service, Clinical Center, National Institutes of Health, reports results since the routine was begun at the center in September, 1953.

Incidence of cross-infections was restricted to three occurrences of illness spread by respiratory secretions, with an interval of about eight months between outbreaks. It was demonstrated that these infections could not be attributed to lack of effectiveness of the handwashing technic. No cross-infections of communicable intestinal conditions occurred.

Incidence of skin irritations was negligible. Liquid detergent assured better medical asepsis, in Miss Benson's opinion, because it eliminated the unknown "contaminated" status of bar soap.

*pHisoHex, Winthrop Laboratories.

Study Accuracy of Enzyme Tests in Diabetes

Using enzyme tests to control insulin intake in diabetic patients may easily have "dire consequences," report Jablokow, Hutchins, and Knight in *Diabetes* (September-October, 1957).

The authors studied two enzyme test preparations, one designed only to detect glucose in the urine, the other to measure its concentration as well.

In a total of 1,940 tests, performed on 360 glucose dilutions in urine, both preparations proved highly accurate in detecting urinary sugar. However, the authors state, one gave misleading results with glucose concentrations over 0.1 percent.

Higher concentrations of glucose were consistently underevaluated. This result could be dangerous in the poorly controlled diabetic patient, they point out. On the other hand, the authors warn, the extreme sensitivity of both tests to minute concentrations of glucose in the urine could lead the diabetic patient to overdose himself into insulin shock.

The authors conclude that while enzyme tests have considerable value as screening procedures for diabetes, they may not provide an acceptable degree of accuracy for clinical management of diabetic patients.

more accurate diagnosis

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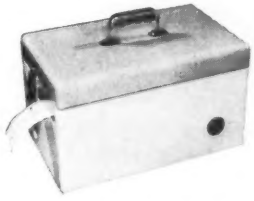

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HUNTINGTON

(Continued from page 83)

Paul L. Wermer—formerly secretary of the American Medical Association committees on research and on blood, has been appointed executive medical director, City of Hope, Duarte, Calif. Since July, 1955, Dr. Wermer had been vice-president and medical director, Warner-Chilcott Laboratories.

Donald F. Woolnough — formerly administrator, Winslow (Ariz.) Memorial Hospital, has become assistant administrator, Southside District Hospital, Mesa, Ariz.

Brig. Jane E. Wrieden—administrator, Booth Memorial Hospital, Cleveland, and first vice-president, American Protestant Hospital Association, has been appointed national consultant for women's and children's service for the Salvation Army.

In her new post, Brig. Wrieden will serve as consultant for all Salvation Army services for women and children and will act as the group's liaison with the United State Children's Bureau.

VA Appointments

Saul Fortunoff, M.D. — has been appointed manager, VA Hospital, Dwight, Ill., succeeding **Warren L. Fleck, M.D.,** who retired. Dr. Fortunoff was previously director, professional services, VA Hospital, Altoona, Pa.

Paul J. Gibbs—formerly registrar, VA Hospital, Knoxville, Ia., now holds a similar position at the VA Hospital, Dublin, Ga.

He replaces **Joe P. Puckett,** who is at the VA Hospital, New Orleans, La.

Frank Merker, M.D. — has been appointed director of professional services, VA Hospital, Roanoke, Va. He had been at the VA Hospital in Topeka, Kans.

Morton B. Pruden — has been named special services officer, Dublin, Ga., VA Hospital, replacing **Mrs. Frances Rogers,** who has been transferred to the VA Hospital, Marlin, Tex.

Clyde D. Webb — has been named chief, supply division, VA Hospital, Lake City, Fla. He was previously assistant chief, supply division, VA Hospital, Durham, N. C.

Deaths

Hilding A. Bengs, M.D.—54, superintendent, Somerset (Pa.) State Hospital, died January 29.

A noted psychiatrist, Dr. Bengs served as Pennsylvania's first commissioner of mental health, from 1949 to 1956. Previously he had been assistant director, Bureau of Mental Health, Pennsylvania Department of Welfare, Harrisburg.

He was appointed acting superintendent of the Somerset hospital in August, 1957, and became its permanent head in November.

Charles F. O'Brien—acting clinical director, East Louisiana State Hospital, Jackson, died January 20.

Harold M. Rabinowitz, M.D.—71, former senior attending surgeon, Beth-El Hospital, Brooklyn, N. Y. died March 9.

A fellow of the American College of Surgeons, Dr. Rabinowitz was active in research work and wrote a number of papers on the blood and blood vessel diseases. He was a member of the American Association for the Advancement of Science, the New York Academy of Sciences, and the International College of Surgeons.

George P. Sheaffer—66, assistant superintendent, Harrisburg (Pa.) Hospital, died Febrary 6.

Mr. Sheaffer had also served as purchasing agent for the hospital for the past 13 years, and had been active in the institution's building projects.

Magnus Westby, M.D.—58, chairman, Minnesota State Board of Medical Examiners, died March 13.

He had served on the board since 1955.

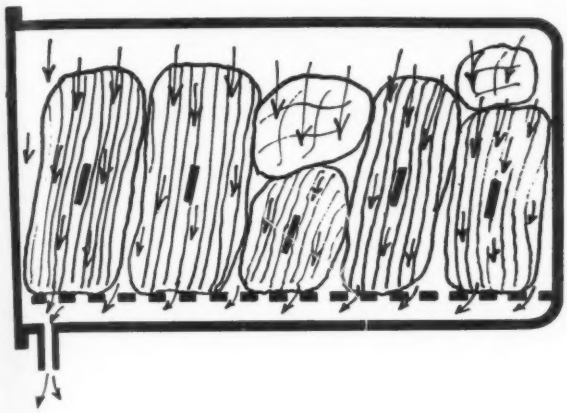


Figure 7. The correct method for using sterilization indicators or culture tests. The controls should be located in the center of the largest packs —near the bottom and in the coolest area of the chamber. The coolest portion of the chamber is at the front bottom, near the outlet to the discharge line.

CENTRAL SUPPLY

(Continued from page 120)

form to a safe time-temperature relationship required for sterilization of supplies. Consequently one type of indicator used in one hospital may react to a different time-temperature relationship than another type employed in another hospital.

If a sterilization indicator is used, it should be placed in the center of the largest and most densely wrapped package in the load (see Figure 7).

CULTURE TESTS

The use of culture tests to evaluate the effectiveness of a sterilizing process is the method of choice. Certainly they constitute a more direct approach to the lethality of the process and are more reassuring to bacteriologists and surgeons.

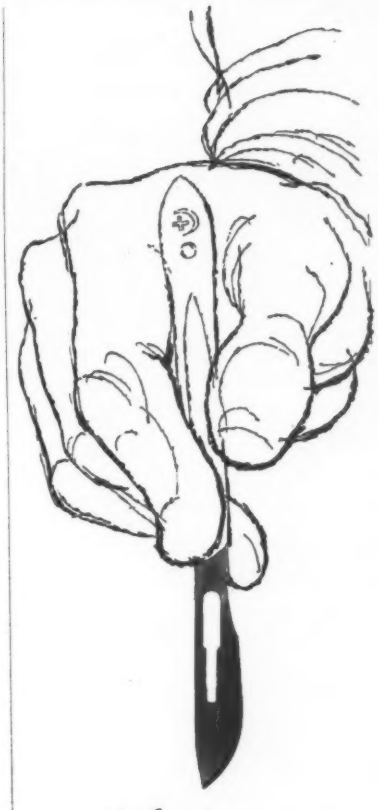
One of the most dependable culture methods for testing the efficiency of sterilization which is rapidly gaining in popularity involves the preparation of bacterial spore strips. Small strips of filter paper, about 2" long by ½" wide, are inoculated with a measured amount of a heat-resistant spore suspension, so that the spore count per strip averages 100,000 or more. The strips are then dried at room temperature for several hours and placed in steam-permeable paper envelopes, each 3" long by 1" wide, sealed, and stored for use.

When using the paper strips seeded with resistant bacterial spores as sterilization indicators, one should take care to insure proper placement of each strip in the test pack or load (see Figure 7). After completion of the sterilizing cycle, the envelopes are removed from the packs and returned to the laboratory for sterility testing of the strips.

Sterility tests should be conducted according to the procedure given in the *U. S. Pharmacopoeia*, XIV edition, page 758.

Organisms are known to vary greatly in their resistance to physical and chemical agents. Contrary to common belief, the spore-bearing organism known as *B. subtilis* or its variant *B. globigii*, is not especially heat-resistant. Recent studies have shown that most strains of *B. subtilis* will not withstand moist heat at 212° F. for much longer than 15 minutes. It is a good thing to keep in mind that culture tests are largely meaningless unless the heat resistance of the organism employed and the number of organisms present in the test sample are known. In addition, the culture should contain a high percentage of spores, and they should be dried before use.

The maximum benefits of progress in sterilization are not realized by the patient until hospital personnel are thoroughly trained to apply the principles and to operate the equipment intelligently.



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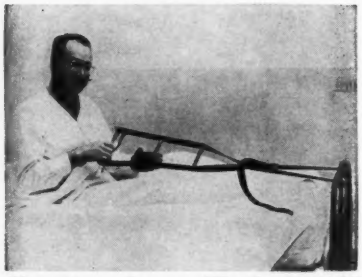

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Chicago Council Formed For Hospital Planning

Edward L. Ryerson, Chicago civic leader, has been elected president of the new Hospital Planning Council for Metropolitan Chicago.

The council was organized to study the city's present and future hospital needs and to provide central planning for the proper distribution and functioning of facilities in the area. Recommendations will be made to all area hospitals and medical agencies.

Represented on the council are civic, business, and education leaders, and representatives of area hospitals and welfare agencies. Officers, in addition to Mr. Ryerson, are: Grant J. Pick, vice-president, Chester R. Davis, treasurer, and E. E. Hargrave, secretary.

Hospital Accountants To Hold Institute

The American Association of Hospital Accountants will sponsor its 16th annual Institute on Hospital Accounting and Finance, July 13-18, at Indiana University School of Business, Bloomington.

Based on the theme, "Furthering Professional Growth in Hospital Accounting," the institute is designed to provide an intensive training program which will fit all job levels in hospital accounting or bookkeeping.

Morning sessions will feature general discussions for all registrants; afternoon sessions will be divided into four study groups, covering general accounting, comptrollers, basic accounting, and costs and budgets.

Total fees, including room and board at the university, are $73 for association members, and $78 for nonmembers. Further information may be obtained from William M. Pierce, executive director, American Association of Hospital Accountants, 2630 East 75th St., Chicago 49, Ill.

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(1) Hagedorn, A. B.: Proc. Staff Meet. Mayo Clin. 32:705 (Dec. 11) 1957.
(2) Best, W. R.; Louis, J., and Limarzi, L. R.: M. Clin. North America (Jan.) 1958, p. 3.

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